India. business & trade

Indian enterprise. Global opportunities.

JAN-MAR 2021

AUSTRALIAN FIRMS RECOGNISE INDIA'S POTENTIAL

Barry O'Farrell AO
High Commissioner of Australia to India

AGILITY & INNOVATION KEY IN POST-COVID WORLD

Amit Shah, Joint President, Flexible Packaging Business, UFlex

'SCIENTIFIC' DISCORD IN AGRI TRADE

INDIA NEEDS A COMPREHENSIVE ACTION PLAN TO ADDRESS THE HIGH UNPREDICTABILITY IN MRLs ACROSS PRODUCTS & MARKETS, WHICH ARE HARMING AGRI EXPORTS.

TPCI Trade Promotion Council of India

VISIT…

SAVE YOUR DATES
20-21 MARCH, 2021
INDUS FOOD™
#SafeForBusiness
INDIA'S LARGEST
F&B EXPORT PROMOTION TRADE SHOW
IS BACK IN THE PHYSICAL FORMAT
www.indusfood.co.in

TPCI

India business & trade

Indian enterprise. Global opportunities

Vol 2 | Issue 1 Jan-Mar 2021

From the Editor's desk

On behalf of team TPCI, I take this opportunity to wish you a very happy new year 2021.

While 2020 was a year of untold devastation marked by COVID-19, it will also be remembered for the manner in which select businesses stood their ground, improvised and successfully navigated the unexpected challenge. Companies that managed to dodge this proverbial bullet (*and in some instances even emerge stronger*) did so through exemplary leadership, focussed & dedicated teamwork, and most importantly, through sensing opportunities in crisis.

For instance, COVID-19 created new market opportunity for a wide range of products like sanitizers, masks and PPE kits. Faced with a surge in demand amid disruption in exports, several Indian textile and apparel companies pivoted to PPE kits in a short span of time, initially driven by national need. From a non-existent industry at the beginning of 2020, India became the world's second largest PPE manufacturer in a few months.

On similar lines, the sanitizer market suddenly witnessed a huge influx of market entrants, as demand jumped 1,400% YoY between February and the first two weeks of March. Apart from FMCG companies like Dabur and Cavin Care, liquor companies like Radico Khaitan & Diageo as well as sugar mills saw the opportunity to utilize their excessive supply of extra neutral alcohol.

In sectors like hospitality and cinemas, business came to an immediate standstill. Production houses started releasing their movies en masse on OTT platforms, which recorded a 60% rise in viewership post-pandemic. Hotel occupancies plunged from 65% in 2019 to 9% during the first half of 2021, leading them to explore alternative opportunities like home delivery of food, high-end marriages and domestic tourism. Aviation companies took a sharp detour to cargo; which started from masks and medical equipment and then moved on to fruits, shrimps, auto parts and even livestock.

Similarly, Indian exporters felt severely constrained as countries shut down borders, which led to cancellation of trade fairs and made physical meetings impossible. But sensing the opportunities emerging in video conferencing, the TPCI team put the necessary infrastructure in place, engaged in extensive consultations & coordination with stakeholders and handheld exporters towards leveraging this medium.

In association with Ministry of Commerce & Industry, MEA and overseas Indian missions, TPCI organised numerous virtual BSMs for exporters in F&B, food processing technology, ceramics and vitrified tiles and paper products sectors. Through meticulous planning and precise matchmaking, these BSMs have enabled exclusive one-on-one buyer interface and business opportunities for exporters during an extremely difficult period.

India was always destined to play a decisive role in the battle against COVID-19 as the largest manufacturer of vaccines in the world. The dawn of year 2021 brings with it a positive vibe through the approval of COVID-19 vaccines developed by Serum Institute of India and Bharat Biotech for restricted use in an emergency situation by the DCGI.

As we look ahead with hope towards the fag end of this terrible period, it also promises to be a pivotal time for Indian enterprise. Visionary programmes like *AatmaNirbhar Bharat* by the government provide businesses with unprecedented opportunities to enhance capacity and capture growth opportunities across markets. TPCI is committed to continue playing a facilitative role for the industry, as it embraces the vision of a self-reliant and globally competitive India, in letter & spirit.

VIRAT BAHRI
Editor, India Business & Trade

TPCI

FOUNDER CHAIRMAN
Mohit Singla
SECRETARY GENERAL
M K Parimoo
DEPUTY DIRECTOR GENERAL
Sandip Das
DIRECTOR - MEDIA
& CORP COMM
Sameer Pushp

EDITORIAL

EDITOR
Virat Bahri
EDITORIAL &
RESEARCH TEAM
Nikhaar Gogna, Mahima,
Vaishali Bhardwaj

DESIGN

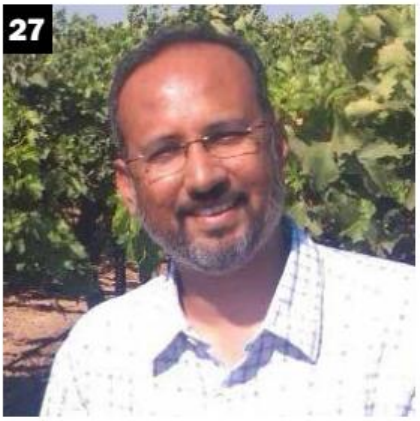
SR. ART DIRECTOR
Prakash Shetty
DESIGNER
Ajay Kumar Singh

India Business & Trade is a quarterly magazine published by Trade Promotion Council of India, 9, Scindia House, Connaught Circus,
New Delhi- 110001, India and printed at Multiplexus (India) C-440, DSIIDC, Narela Industrial Park, Narela, Delhi-110040

Material in this publication may not be reproduced in any form without the written permission of TPCI. Editorial/external opinions expressed in this magazine are not necessarily those of TPCI, and TPCI does not take responsibility for the advertising content, content obtained from third parties and views expressed by any independent author/contributor.

For editorial queries/feedback, contact: editorial@tpci.in
For advertising queries, contact: advertise@tpci.in

TABLE OF CONTENTS



LEARNING IN CRISIS

Azhar Tambuwala discusses how the Indian grape industry overcame MRL issues after severe shocks.

ICEBERG AHEAD

Nandu Nandkishore, ISB, cautions that new technologies promise a highly uncertain future for economies.

SPOTLIGHT

4 **Reflections 2020**
As the New Year begins, we take a pitstop to reflect upon some of the most illuminating insights we received from thought leaders across domains in 2020.

TRADE TALK

6 **Australian businesses recognise India's potential**
The Hon Barry O'Farrell AO, High Commissioner of Australia to India, is confident that Australia is well placed to fulfil India's investment needs.

PERSPECTIVES

8 **Shifting goalposts of AI post-COVID**
With the spectre of COVID-19 & emphasis on 'social distancing', AI has acquired a new significance across sectors.

10 **Government or industry – Who picks the baton?**
The key to ensure job-oriented growth in India is to spur investment in low-productivity sectors and boost enterprise.

12 **Manufacturing ecosystem in India**
Dr. Sunitha Raju, IIFT, reflects upon the lessons that India can learn from China to be the world's next factory.

14 **Innovation will be key in the post-COVID world**
Amit Shah, Joint President, Flexible Packaging Business, UFlex, explains how the company rejigged operations & delivered on innovation to fight COVID-19.

16 **Container shortage: A dampener for India's exports**
Measures need to be taken to encourage growth in container production within the country.

FOCUS SECTOR: PHARMA

18 On the innovation trail?
India needs to reorient its pharma industry to become an innovation hub.

COVER STORY

21 Scientific discord in agri trade
Marked variations and constant changes in MRL regulations across markets cause significant uncertainty among Indian exporters.

26 Pollution is affecting organic producers
Krishnendu Chatterjee, Sr. VP, DOTEPL, explains how Indian organic food producers are also facing MRL challenges.

27 Grape exports: Opportunity from crisis
Azhar Tambuvala, Director, Sahyadri Farms explains how the industry worked in collaboration with stakeholders to tackle MRL issues.

SERVICES: TOURISM

28 Towards a post-pandemic resurrection
To emerge out of the crisis, travel bubbles, domestic tourism & touchless travel are possible course corrections.

FOCUS MARKET: BRAZIL

30 An early riser in the post-pandemic race
Brazil has shown a relatively faster industrial revival post-COVID. But will this be a sound approach?

OPINION

32 Moratorium on duties untenable
Rashmi Banga, Senior Economic Officer, UNCTAD, argues that developing countries should have the right to impose tariffs on electronic transmissions.

34 Iceberg ahead for people & societies!
Nandu Nandkishore, Professor, Indian School of Business, cautions that with the rise of AI, societies need to prepare for a new world.

LATEST@TPCI

35 TPCI initiatives post COVID-19
Amidst the challenges of the pandemic, the TPCI team worked tirelessly to ensure uninterrupted market access for Indian exporters.

EARLY RISER

Will Brazil's fiscal loosening prove to be the right approach in its war against COVID-19?

WTO & E-COMMERCE

Rashmi Banga, UNCTAD supports developing nations' right to reject moratorium on custom duties.

LATEST@TPCI

Over 500 Indian exporters and around 900 buyers engaged via virtual BSMs for the F&B sector.

Reflections 2020

While COVID was the headline to watch throughout 2020, there are other reasons why this extraordinary year will stay etched in our collective memory. As the new year begins, we take a pitstop to reflect upon some of the most illuminating insights we received from thought leaders across domains during this exceptional year.

Santosh Sarangi
IAS Officer

While it is a fact that we have struggled with MRLs and micro biological parameters in our food and marine exports, India has also emerged as a tremendous success story when it comes to overcoming the odds and creating the required ecosystem for good agriculture practices for many products.

Manish Tiwary
Vice President, Amazon India

One thing we've learnt from the COVID-19 crisis is how important a role Amazon and e-commerce can play with enabling policies – for our customers as much as for small businesses & economy.

H.E. Mr. André Aranha Corrêa do Lago
Ambassador of Brazil to India

Both Brazil and India have dynamic and complex economies with competitive sectors that can benefit from stronger trade and investment links and reduction of tariffs and other trade barriers.

Anindya Mallick
Partner, Deloitte India

"Edtech startups through their product and service offerings are expected to change the user experiences for both students and teachers and bring in conceptual-based learning, which has largely been lacking in the current education system."

Dr. Dina Khalifa
Lecturer in GCU, London

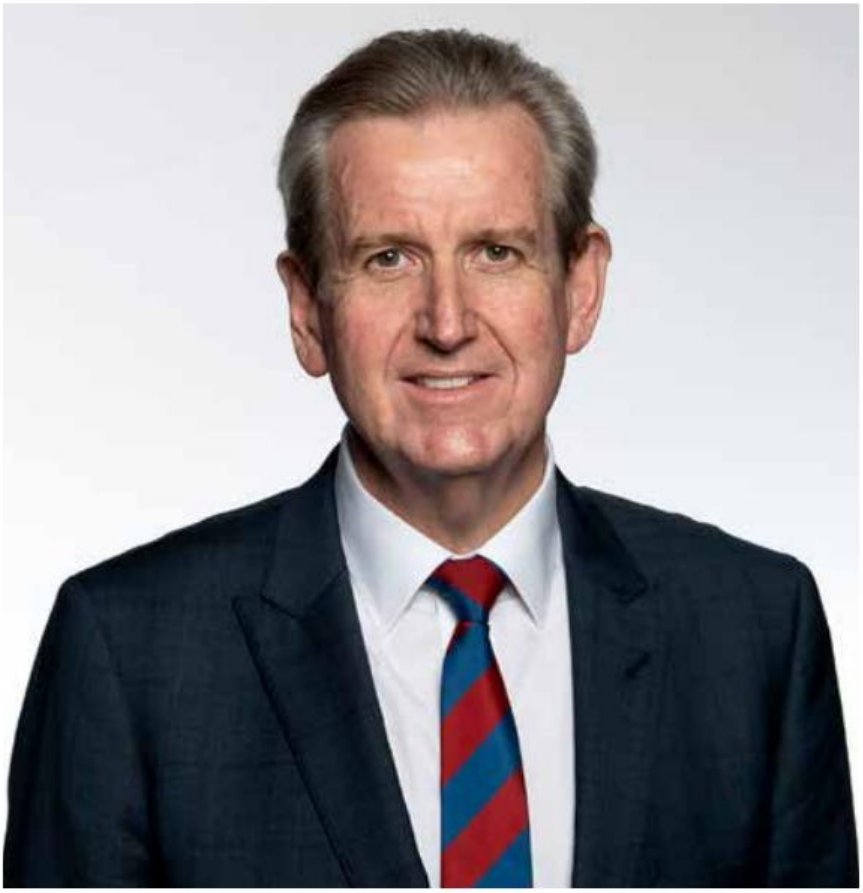
"The lure of luxury is quite amplified in times of uncertainty. True luxury represents aspiration, excellence and timelessness, all of which seem quite desirable when consumers are selective about how to spend their money during hardships."

Prof. Ashita Aggarwal
Professor of Marketing, S.P. Jain Institute of Management & Research

"It's not just customers but also the businesses that have changed (post-COVID). They have realized how they can do their business differently, how they can cut costs, how it's not essential to travel for everything and things can be seamlessly managed even remotely."

Naveen Tewari
Founder & CEO, InMobi Group

"In the last five years, since the PM launched the Digital India program, India's digital ecosystem has scaled drastically. From a very small consumer base on the internet, we are among the largest internet markets today, where citizens spend disproportionate time on digital platforms. I feel that the time has come for us to essentially grow as an ecosystem in terms of regulating the digital platform."



Australian businesses recognise India's long-term growth potential

Hon Barry O'Farrell AO, High Commissioner of Australia to India, stresses on avenues for collaboration in food processing, education, energy, EVs, telecom & Industry 4.0.

***IBT:* Recently, India and Australia engaged in an India-Australia leaders' virtual summit and extended the bilateral Strategic Partnership concluded in 2009 to a Comprehensive Strategic Partnership (CSP). What is the rationale and the key areas that will benefit from this revision?**

Barry O'Farrell AO: Australia-India ties are at historic highs. By elevating our relationship to the level of a Comprehensive Strategic Partnership, India and Australia have cemented what has been a rapid deepening and broadening of the relationship. The partnership also shows our commitment to working even closer together to pursue a shared vision for the Indo-Pacific region – to ensure that it is secure, open, inclusive & prosperous.

In addition, our Prime Ministers signed eight high-impact, practical agreements to advance strategic & economic cooperation. These agreements ranged from maritime and cyber security to critical minerals, education & water management. They will deepen our strategic & economic cooperation, amidst unprecedented global challenges.

***IBT:* India is undertaking reforms in various sectors, creating an environment conducive for business and FDI. How do you see it impacting Australian investments in India?**

Barry O'Farrell AO: In responding to the economic challenges of COVID-19, we have seen India adopt fundamental reforms that have opened up its sectors to new investments. Reforms in India's agricultural sector create opportunities for Australia to invest in India's agricultural supply chain infrastructure, including food processing, logistics and bulk storage solutions. Similarly, India's program of divestment of quality government-owned assets will continue to present opportunities to Australian investors, including through India's National Investment and Infrastructure Fund (*NIIF*).

Recently, we hosted some of Australia's largest investment funds – collectively managing assets of more than AUD 736 billion (*INR 38 lakh crore*) – in exploring investment opportunities in India with the NIIF.

The virtual delegation follows in-person tours to New Delhi and Mumbai in 2018 and 2019 facilitated by the Australian Government, and delivered on a commitment made between Prime Ministers Modi and Morrison in the June virtual summit to support knowledge and network building among investors. Australia is well-placed to support India's investment needs; it finished 2019 with the world's fourth-largest pension funds market, valued at AUD 2.95 trillion (*INR 150 lakh crore*).

There is a recognition among Australian businesses that over the long term, India's economy is destined for considerable growth across a range of sectors. We welcome further reforms to increase investment attractiveness and ease of doing business.

***IBT:* How is the establishment of an Australia-India Food**

Partnership expected to open up new opportunities and benefit the food processing sectors in both countries?

Barry O'Farrell AO: Australia and India have been partners in food and agriculture for a very long time and we continue to make progress with each other's market access requests, creating an environment for greater trade and investment, including in food processing. Our overseas investment agencies support this through the great work they do in fostering and developing business ties.

Both countries have made strong progress in market access matters over the last 12 months for the benefit of our exporters and farmers. Australia has granted access for the import of Indian pomegranates and approved an additional facility for the export of Indian mangoes to Australia. Similarly, India has made changes to accepted quarantine treatments for Australian malting barley and horticultural products.

Together, we are also exploring long term collaboration in grains management. There are many other opportunities, which will provide consumers in Australia and India with greater choice, along with trade benefits for our economies, and the livelihoods of our farmers.

IBT: India is currently Australia's 4th largest export market. What are the major opportunities that Australia would like to explore for enhancement of exports?

Barry O'Farrell AO: Going forward, Australia's goods and services exports can support India's economic growth.

The counter-seasonal supply of agricultural produce is a big strength of our trading relationship. India is an agricultural powerhouse in its own right, but where there are shortfalls in domestic production, our exports are able to meet India's demand for a wide variety of foods and agricultural products. And this goes both ways.

Our growing two-way trade in agriculture means consumers in India can enjoy Australian walnuts, almonds, and beer made from Australian malting barley, to name a few. Australian consumers can likewise savour Indian mangoes, table grapes and – more recently, following completion of an import protocol – pomegranates. With world-leading innovation, technology, productivity, knowledge, research and development, we can also export our know-how along with our agricultural goods.

Australia also has great potential to be a reliable energy partner to India. We can help India meet its energy demand by supplying high calorific coal, LNG, and potentially in the future, hydrogen.

As India transforms towards cleaner technologies, Australia can be a trusted and reliable supplier of critical minerals. For example, Australia can supply India with critical resources like lithium, cobalt and zircon as India works to become a world-leading manufacturer of renewable technology, electric vehicles, telecommunications and batteries. Other sectors where we see enormous potential to grow our trade relationship with India include education, infrastructure, health and advanced information technology services, such as cybersecurity.

> **"OUR GROWING TWO-WAY TRADE IN AGRICULTURE MEANS AUSTRALIAN CONSUMERS CAN SAVOUR INDIAN MANGOES, TABLE GRAPES AND NOW WITH COMPLETION OF AN IMPORT PROTOCOL, POMEGRANATES."**

IBT: What key benefits does Australia provide Indian businesses as a destination for investment? How do you view the potential of collaboration between technology companies of both countries in the emerging paradigm of industry 4.0, AI, automation, etc?

Barry O'Farrell AO: Many of India's top companies have invested in Australia. Investors choose Australia due to the resilience of our economy, which is built on foundations of sound governance and strong institutions. These foundations and a proactive response to the global economic downturn caused by COVID have protected the economy, which remains welcoming of investment.

We are one of the most business-friendly countries in the world, and with 14 free trade agreements in place, approximately 70% of our trade enjoys liberalised access to overseas markets. Twelve of our 15 largest markets are in Asia and Oceania.

Australia is also the perfect marketplace for digital Indian start-ups to develop their products: Ola Cabs, for example, invested in Australia in 2018, recognising it as an attractive and high-value market that fosters fair competition.

Australia is also lucky to have an abundance of critical minerals, and there are opportunities for Indian businesses along the entire supply-chain whether it be exploration, extraction, production and processing. It is one of the most technically advanced, innovative and efficient global mining jurisdictions, with a long history of successful project development. Indian companies have already invested in such mines, and our new critical minerals prospectus lists over 200 potential investment opportunities for Indian investors.

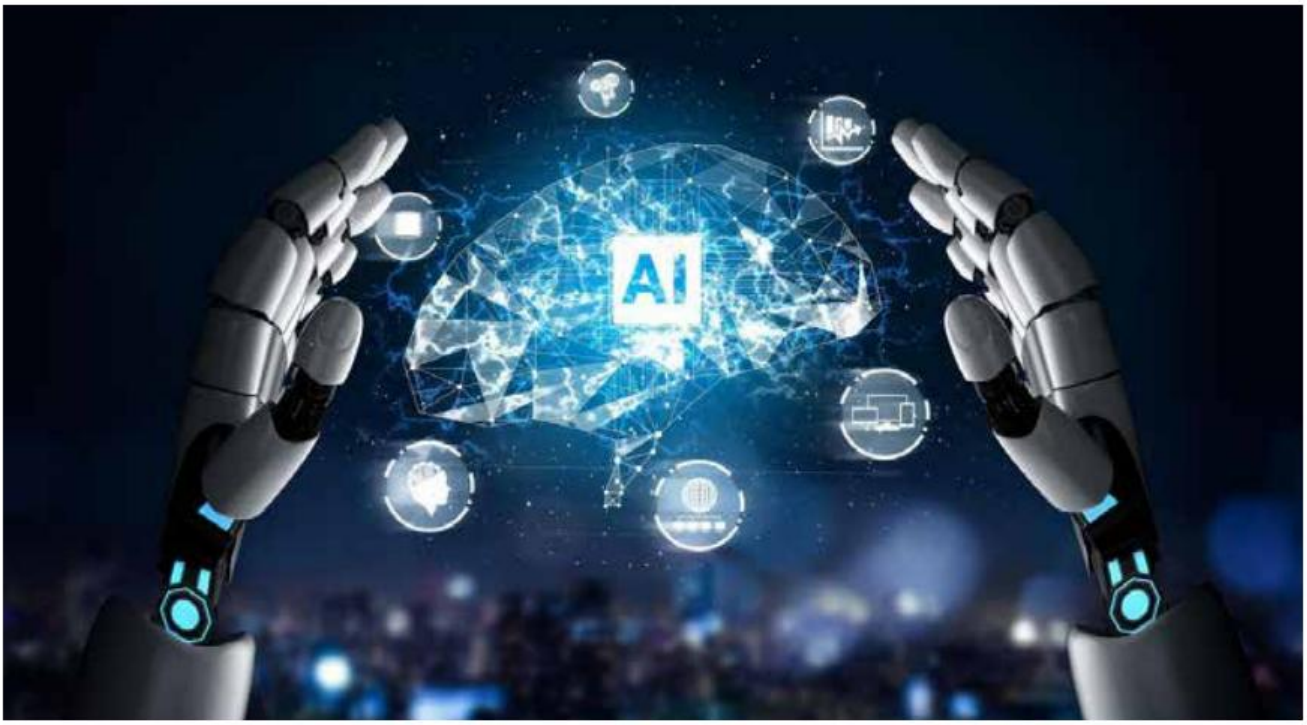
There is also enormous potential for Australia and India to increase collaboration in science and technology. A very recent example is the partnership between Australia's Griffith University and Indian Immunological Limited for the development of a vaccine for both COVID-19 and the Zika virus.

Digital technology companies and research institutions in both countries can also join forces in areas such as cyber security and artificial intelligence (*AI*). ■

Shifting goalposts of AI post-COVID

Already recognised as a game changer for the global economy, AI has acquired a new significance across sectors in the aftermath of the COVID-19 pandemic.

BY VIRAT BAHRI



Artificial intelligence (*AI*) had been labelled as a game changer in the global economy much before we were introduced to COVID-19. A report by McKinsey in 2018 predicted that around 70% of companies would have adopted one or the other form of AI activity by 2030. AI has the potential to add US$ 13 trillion to global GDP by 2030, around 16% higher than 2018. The report added that AI can bring in major changes in the way humans live and work across five areas – computer vision, natural language, virtual assistants, robotic process automation, and advanced machine learning.

With the spectre of COVID-19, the emphasis on 'social distancing' meant an entirely different set of 'discomfiting' implications of keeping human beings at the workplace. There is a strong anticipation that AI could be deployed at a rapid pace by companies to manage their present and secure their future. And those who have seen the benefits thanks to the pandemic, could be more permanent converts.

Below, we give an overview of three key sectors where AI can undergo a paradigm shift in the post-COVID-19 era.

MANUFACTURING

A report by Boston Consulting Group opines that AI can help companies simulate work environments and deploy on-demand labour forces. They can detect customer patterns and deliver 'hyper-personalised' products.

AI CAN PLAY A HUGE ROLE IN HELPING COMPANIES OPTIMISE OPERATIONS OF SMALL FACILITIES AND MAKE THEM WORK ON LEANER INVENTORIES

As discussed earlier, robots are expected to play an increasing role in manufacturing units, as they can perform monotonous tasks without getting tired, making errors and even getting 'infected'. Rishu Sharma, Principal Analyst, IDC India, comments, "Technologies like AI-powered tools can be leveraged when it comes to smooth business operations on the floor. Intelligent automation also enables monitoring machines remotely and reducing manual efforts across processes in a manufacturing setup."

Also, given the rising protectionism and disruptions in global supply chains, companies have been compelled to change their approach. Earlier, companies emphasised on small numbers of high volume factories in low-cost manufacturing destinations. Now the emphasis is on building a large number of smaller facilities closer to the customer. AI can play a huge role in helping companies optimise

operations of such facilities and make them realistically operate on leaner inventories, shorter downtimes and higher speeds.

Also, robotics and 3D printing can be efficiently deployed across these units to boost production when needed. A potential use case for AI is mass customisation, imparting the ability to specifically customise products as per customer needs on a large scale. Another area where AI can be of immense value is dangerous environments where deploying humans is risky.

FINANCIAL SERVICES

Banks are viewing COVID-19 as an opportunity towards greater technology integration in their business models. They typically have a diverse set of customers, from the senior citizens who prefer personal interactions at bank branches to a small business owner looking for growth capital, to young professionals who are perfectly at ease with online banking. As they build new age digital infrastructure, AI and data analytics can help banks garner insights from their data assets to develop personalised customer solutions. This will be a core competence area in the future, which banks cannot afford to miss.

Banks have already started using AI-based tools to replace traditional call centres and meet growing customer interface requirements. Human interface can be limited to those singular non-routine queries that can't be handled by technology.

Another important use case for AI in banking is in better estimating risks in both individual transactions and the larger financial landscape of a market. In an era where young and lean fintech companies are upending the lending landscape for instance, AI can help banks ascertain the creditworthiness of a potential borrower at much lower time and costs, and with much better rigour based on comprehensive data analysis. Similarly, AI-based fraud detection systems are showing promise, as they can analyse client behaviour and spending patterns through his/her transactions and trigger a security mechanism when there is an aberration in these patterns. Data-driven investments (*also called algorithmic trading*) are also showing a rapid increase to reach US$ 1 trillion in 2018.

EDUCATION

The closing of schools has been particularly worrying for students and parents across the world. Online education has been seeing some traction in the country with ed-tech startups like Byju's and Vedantu. But these have been supplemental to the core curriculum at best, helping students grasp concepts and also have some fun learning.

SCHOOLS WOULDN'T HAVE VOUCHED TOO MUCH FOR ONLINE EDUCATION TILL RECENTLY. BUT COVID-19 HAS LEFT NO OTHER RECOURSE.

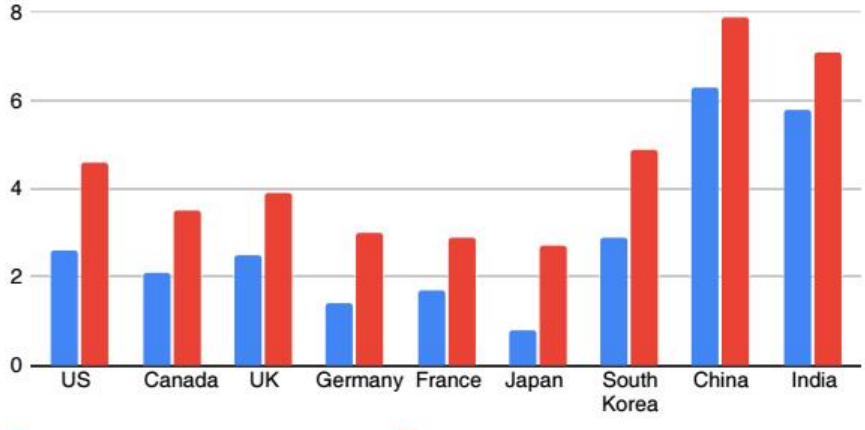
Schools in general would have not vouched too much for the power of online education till recently. But now there is practically no other recourse to reach students and try and cover whatever is possible in the absence of a traditional classroom environment. But the true challenge is personalised education – the holy grail for even the conventional system of education.

A report by Global Market Insights estimates that AI in education was a US$ 400 million market in 2017, which is projected to cross US$ 6 billion in 2024. Through the use of deep learning, machine learning and advanced analytics, AI is beginning to provide some vital answers, from experiential online learning driven by AI-powered virtual role play simulations, to software for individual tutoring and neuroscience-based learning platforms.

You can visualise a BOT, for instance, that is aligned with every child from the day he/she joins school. This BOT can analyse scores of data on the child's individual abilities, strengths and weaknesses and make appropriate interventions in the curriculum or pedagogy for that child. Prof Anupam Basu, Director, National Institute of Technology, Durgapur, supports this view, "So far, in online education we are approaching the students as a community or a batch, but the same size does not fit all."

Technology can resolve the challenge of low teacher-student ratios and democratise access to quality education – across geographies and economic classes. Teachers can utilise blended learning (*combination of online and offline approaches*) to optimise outcomes. This crisis has, therefore, provided an opportunity to explore possibilities and limitations of online AI-based learning. ■

IMPACT OF AI ON GVA OF SELECT G-20 COUNTRIES BY 2035



Source: Accenture, Figures depict percentage growth

Government or industry – Who picks the baton on employment?

The solution to the challenge of low consumption as well as economic growth lies in boosting employment. This can come from investment by industry in low productivity sectors and strengthening of the startup ecosystem.

BY MAHIMA

A few years ago, a rise in unemployment from 3.8% in 2012-13 to 5% in 2015-16 was considered a scary figure, even as the economy grew by 7%. Post-COVID, the unemployment figure reached an all-time high of 23.52% in April 2020. This has recovered substantially to 6.51% in November 2020. However, the attention has shifted significantly to the government to ensure that the economy revives quickly.

This expectation is based on ground realities that pre-date the COVID crisis. Around 10-12 million youngsters are added to the formal economy every year. Providing them desirable employment opportunities becomes an onerous task, which is expected to get even tougher, considering uncertainties in the job market with the anticipated rise of technologies like automation and AI.

It is an insidious assumption that if the government undertakes any infrastructure generation programme, at least some of the population would get employed. However, what gets missed is the fact that any such programme has to be financed either through taxes – corporate or income – or borrowing. These can only come from pockets of people and corporations. When income tax is the financing source, it leads to a lower disposable income of individuals. The result is low expenditure on consumables like appliances and clothing, and ultimately the obvious response from the private sector – lay-offs. These layoffs are much larger than the employment created (*equivalently, the tax revenue realised*) through the channelising of government funds into infrastructure.

WHILE THE GLOBAL AVERAGE OF PUBLIC EMPLOYEES IS 3.5 PER 100, INDIA IS AT A MUCH LOWER LEVEL IN COMPARISON AT 2 PER 100

If the source of financing is a corporate tax, then too, it is liable to lead to high prices, low real wages, and fewer returns for investors – resulting in net unemployment. Similarly, borrowing from RBI results in inflation, impacting purchasing power of individuals, reducing employment and via increase in costs of loanable funds, lowering private investments through the

same pathway.

The government's major focus areas should be providing for public services like health, education, national security, police protection and administering the judicial system. Number of public employees per population in these areas could be considered a proxy for the kind of services provided. While this number in Scandinavian countries is close to 6 per 100, the global average is 3.5 per 100. India, in comparison, is at a much lower level of 2 per 100. This shows immense scope of job creation.

If more services are provided, new jobs will be created, but it cannot be sufficient to resolve the unemployment situation. Here, the key is to understand why unemployment arises. When productivity is high (*be it due to humans or technology*), there is relatively little need of employing more people, as the same task can be performed by fewer people. But, if economic growth is so fast or the demand is growing at such a pace that more production can only take place by hiring new people, then unemployment declines.

Right now, demand is at a low and so is economic growth. But productivity is high, and that's why there is unemployment. The pathway to come out of this conundrum is innovation, creation of jobs in sectors that are growing at a slower pace or investment in the economy saviors – 'businesses' – since innovation takes time.

Companies require a business-friendly environment to prosper. Though they hire keeping in view the profit motive, they ensure that efficiency is maintained. If the future seems bleak for a particular period, they shift focus to the adoption of 'lean' production methods i.e. using labour-replacing, technologically intensive methods.

Therein lies the role of the government in utilizing India's huge resource pool. The country still has a demographic advantage and youngsters are the veins of any start-up ecosystem. So the government needs to work towards fostering an environment that

THE INDIAN ECONOMY IS SHOWING SIGNS OF REVIVAL, BUT THE MISSING PART IS LABOUR INVOLVEMENT, WHICH AFFECTS DEMAND

encourages the setting up of new businesses to boost employment.

In India, the government's role becomes all the more important, given that a majority of the population is employed in medium and small-scale enterprises, which are largely informal. The flip side of this is a lack of stable employment and non-wage benefits – which does not allow it to be a major job creator.

Formalizing these businesses to ensure job stability can immensely change the employment landscape. The government can do so by getting them registered, keeping in mind two issues. Firstly, the registration process, which currently involves multiple registrations – GST, provident funds and ESI Corporation, and many more – requires simplification. Secondly, despite valuing the acquisition of skills, so many firms don't want to invest in on-the-job training; so establishing a portable national level programme to acquire apprenticeships could be key.

Right now, the Indian economy is showing signs of revival through improvement in auto sector sales, rise in GST numbers, resumption of operations of industrial units, power consumption, railway freight collection, and export growth by about 5%. The IHS Markit India Manufacturing Purchasing Managers' Index improved marginally to 56.4 in December compared with 56.3 in November, showing signs of revival. However, the services PMI slowed to its lowest level in three months to reach 52.3 in December, down from 53.7 in November. India's unemployment rate also rose sharply to 9.1% in December 2020, the highest in the past six months according to CMIE.

To ensure job-oriented revival, the spenders or real job creators, i.e. consumers will not have the income to spend. Hence, low productivity growth sectors like construction and healthcare can be immediate priority sectors for raising employment numbers, with innovation through investment in education, skills, and R&D as long-term targets. ■

Manufacturing ecosystem in India: Lessons from China

Developing a manufacturing ecosystem in line with Indian conditions is the need of the hour. It is important to understand what China did right while developing the roadmap ahead.

India's share in world manufacturing value added (*MVA*) was merely 2.84% in 2018. The share of manufacturing in GDP is 17%, in spite of the vision statement of increasing the share to 25% by 2020 (*Niti Aayog, 2018*). India, with its domestic market base, does have opportunities to enhance its manufacturing performance. This requires a policy framework that is in line with ground realities. As such, it is important to question what made China a manufacturing hub and why India was not able to achieve the manufacturing targets it set for itself.

China's emergence as a global production hub is primarily on account of developing the manufacturing sector and focusing on manufacturing & exports. Its share in world MVA increased from 11.6% in 2005 to 24.8% in 2017 (*CIP UNIDO, 2018*). Manufacturing exports of China as a share of the global total increased from 0.8% in 1980 to 17% in 2018, the highest in the world, outpacing the US, Germany and Japan. As such, China acquired the first rank in Global Manufacturing Competitiveness Index (*Deloitte 2016*) and as per the recent UNIDO data on CIP, it is ranked 3. In China, manufacturing accounts for over 40% of the GDP.

China has emerged as the world's factory by following a planned strategy. The MIC 2025 clearly highlights the future developments of industry, which are centred on high tech and emerging industries – electrical equipment, farming machines, new materials, energy saving, information technology, aerospace, railway and ocean engineering equipment. This is also in line with the future demand structure. Such foresight is also necessary for India.

> **"THE MADE IN CHINA (MIC) 2025 CLEARLY HIGHLIGHTS THE FUTURE DEVELOPMENTS OF CHINESE INDUSTRY, WHICH ARE CENTRED ON HIGH TECH AND EMERGING SECTORS LIKE ELECTRIC EQUIPMENT, FARMING MACHINES, ETC."**

A CUSTOMISED APPROACH

In all these, innovation has defined the competitive advantage. The targets are clearly set in MIC 2025, where the focus is on strengthening microelectronics, aerospace, computing, robotics and renewable energy. The government's developmental initiatives – industrial regions with concentrations of assembly plants, skilled workers and material and component suppliers, provide immense scale economies.

Imbibing from China is not the answer, but developing a manufacturing ecosystem in line with Indian conditions is the need of the hour. The focus should be on sectors that

have wide industrial applications & need immediate attention. These include electronics, chemicals, machine tools, steel & telecommunications. A detailed policy framework for electronics, pharmaceuticals and telecommunications was drawn in 2012, but most of the proposals are yet to be implemented.

A standard setting body needs to be ensured at the earliest, since without such a framework, imports and exports are not subjected to indigenous standards. With a high rate of obsolescence, continuous investment in technological upgradation is necessary, which is not happening due to uncertain investment climate. The *Make In India* initiative needs to be supported by technology transfer under joint ventures.

UNIT LABOUR COSTS FOR SELECTED INDUSTRIES INDIA VS CHINA (2004 – 2014)

NIC04	Description	India		China	
		2004	2014	2004	2014
2411	Chemicals	2.34	4.80	1.80	7.89
2423	Pharmaceuticals, medicinal chemicals and botanical products	2.50	5.26	1.91	8.36
2429	Other chemical product n.e.c.	1.09	3.33	1.66	7.58
2710	Basic Iron & Steel	2.90	5.18	2.46	8.31
2899	Other fabricated metal products. n.e.c.	1.3 2	2.84	1.52	7.34
2915	Lifting and handling equipment	1.97	4.96	2.06	9.40
2922	Machine-tools	2.07	5.62	1.75	7.79
2929	Other special purpose machinery	2.50	5.59	1.97	8.72
2930	Domestic appliances, n.e.c	1.84	3.65	1.75	8.24
3110-3120	Electric motors, generators and transformers	4.85	5.27	2.87	8.43
3210	Electronic valves and tubes	2.56	4.77	2.04	8.39
3140	Accumulators, primary cells and primary batteries	2.04	4.00	1.64	7.55

Source: INDSTAT 4, UNIDO

END-TO-END SUPPLY CHAIN

Developing export competitiveness with quality and cost, would provide India a better opportunity when global trade normalizes. The policy challenge is to support the domestic industry without compromising on cost efficiency.

Further, despite the COVID crisis, export promotion should be a conscious policy agenda. The underlying objective is to expose the industry to a market discipline that can promote productivity, cost efficiency and product development (*as with the experience of Asian tigers*). In this regard, scale of operation would be an important determinant. The difference in the scale of operation between India and China is an eye opener. The consolidation of industrial establishments since 2010 has made the difference for China. Similar efforts for critical industries like electronics, machine tools, chemicals need to be worked upon, as these industries supply intermediates to most consumer goods sectors.

> **"EXPORT PROMOTION SHOULD BE A CONSCIOUS POLICY AGENDA FOR INDIA IN ORDER TO EXPOSE THE INDUSTRY TO A MARKET DISCIPLINE THAT CAN PROMOTE PRODUCTIVITY, COST EFFICIENCY AND PRODUCT DEVELOPMENT"**

Currently, India's manufacturing exports are dominated by low technology intensive manufactures, which account for almost 50%. We should consciously upgrade to medium and high skill products. This would not be possible if a fractured value chain exists. The focus should be on critical intermediate goods industries like electronics, chemicals and machine tools.

To sum up, while learning from the experiences of China and ASEAN countries, India should develop its own policy framework that is line with the right fundamentals and context. The policy outcomes need to be carefully monitored. *Make In India* and *Skill India* are conceptually good programmes, but there should be greater compulsion towards developing manufacturing capability in India as opposed to just assembly. A serious introspection is necessary on this front. ■

Dr. Sunitha Raju is a Professor at IIFT. She has 30 years of extensive experience in Education, Research, Policy formulation and Evaluation. The views expressed in this column are her own.

Agility and innovation will be key in the post-COVID world

Amit Shah, Joint President, Flexible Packaging Business, UFlex, explains how the company rejigged operations & delivered benchmark product innovations to fight COVID-19.

IBT: What role has innovation played in the success of UFlex across its business divisions?

Amit Shah: Innovation is not just a term, it is a part of our DNA. It is one of the key factors that has driven our growth and helped us in maintaining our leadership position in the market. We continuously keep doing newer studies and R&D, basis which we introduce newer innovative products to keep pace with the fast-changing world.

Some of the remarkable innovations we have introduced lately are: easy tear structure for single-dose sanitizers; eco-friendly paper-based tubes with reduced plastic at source; six-layered N95 mask to prevent COVID spread; fast cure solvent-free adhesive SL 777A/999C; a water-based playing card OPV; and laser embossed cylinder for hand embossing effect, to name a few.

IBT: Recently your company developed a Personal Protective Equipment (PPE) Coverall 'Flex Protect' in joint collaboration with IIT-Delhi and INMAS, DRDO. What are its key competitive USPs?

Amit Shah: A few months back,

"THE PRIMARY USP OF 'FLEX PROTECT' IS BREATHABILITY AS WELL AS ULTIMATE PROTECTION BY DESIGN. IT IS MADE OF 70 GSM, WHICH MAKES IT VERY COMFORTABLE AND FLEXIBLE, AND IS FIT TO BE WORN FOR LONG HOURS AS WELL."

we introduced 'Flex Protect', which we developed in collaboration with IIT-Delhi and INMAS, DRDO, Delhi. The primary USP of 'Flex Protect' is breathability and ultimate protection by design. It is made of 70 GSM, which makes it very comfortable and flexible, and is fit to be worn for long hours as well. The product has been approved by the Defence Research and Development Organisation *(DRDO)* for use by the front-line health workers who are fighting the battle against COVID-19.

***IBT:* What impact did COVID-19 have on your company's operations and output? How did it affect your global supply chain strategy, as well as prices of raw materials? How are you coping with this situation?**

Amit Shah: Being in the business of packaging life-sustaining products in the consumables and pharmaceutical space, we were on top of the situation from the very onset of Corona and worked with local authorities at each of our plants. We also had a faster return to normalcy and restored production at full capacity wherever possible, without neglecting employee's health and following rules on sanitizing, social distancing, temperature checks and wearing of PPE.

***IBT:* The pandemic led to an exodus of workers to their hometowns, leading to a rising trend towards new age automation. What is your experience and future plans?**

Amit Shah: We were one of the early adopters of technology and automation in this sector. Back in 2016, we set up a 'Fully Automatic Robotic Laser Engraving Line' for manufacturing rotogravure cylinders at our Noida facility. We have recently launched a new automated Chrome Plating Line for Rotogravure Cylinders that helps enhance efficiency and ensure consistency with improved print quality. We have also introduced automation at the shop floor level, under which we have integrated the machines with the IT application. So, the production on the machines automatically goes into the system with minimal manual intervention.

"UFLEX IS THE WORLD'S ONLY FULLY VERTICALLY-INTEGRATED PACKAGING COMPANY. WE ONLY IMPORT A FEW FOREIGN MATERIALS, SO, THE OVERALL IMPACT & CHALLENGES OF SOURCING RAW MATERIAL HAS BEEN MARGINAL."

***IBT:* What are the major learnings for you from this crisis in terms of leadership and business strategy? What factors will, in your view, separate winning companies from the rest in the post-COVID world?**

Amit Shah: The pandemic has been a classic test of our leadership character. Despite the nebulous situation at play, we were able to rise to the occasion and ensured continuity of packaging material supplies for essential services like food and pharma. The challenges that crept from the outbreak of the epidemic prompted us to modify our facility setup to compliment the new way of life and speed up our product offerings.

In my view, the most important factor that will separate winners from losers will be the agility to move along with the fast-changing market and keep introducing relevant innovative products. ■

Amit Shah is an industry veteran with over two decades of domestic & international experience in B2B marketing and sales, in both domestic as well as international markets. He started his career in Sharp Industries and has worked with India Foils, Paper Products Ltd before moving to ITC Limited where he spent almost a decade, heading Sales as an SBU head.

Container shortage: A stumbling block for India's foreign trade

Container shortage is a serious last mile barrier to India's export growth. Measures need to be taken to encourage growth in container production within the country.

BY NIKHAAR GOGNA

According to the Indian Container Market Annual Report, 2019, the total thoroughput of Indian container terminals in FY 2018-19 was 16.99 million TEUs, with a year-on-year growth of 10.5%, while total installed capacity stands at 28.65 million TEUs. The report also notes that the Indian container market is recording an incremental growth on account of several policy reforms such as mechanisation, deepening the draft and speedy evacuations.

However, despite its impressive performance, the sector finds itself in the middle of a serious problem today – the paucity of containers in India.

COVID-19, CHINA & THE CRUNCH

According to industry estimates, India's container capacity is currently pegged at 29 million TEU. This, however, is not sufficient to meet India's demands since, of late, shipping lines are shutting out the containers abruptly; giving reasons that the vessels are full. This paucity of containers is paradoxically the result of a sudden improvement in exports and a slump in imports, especially from China.

India's export volume grew by 24% between July and September, 2020, while its imports reduced by 28%. In November, while India's exports registered a 5.4% fall, its imports recorded an even higher fall of 11.26%. Amidst the lockdowns, trading was low and shipping lines also had to cut capacity. However, now that exports have rebounded, India's imports (*particularly from China, with which it is currently facing severe tensions due to the border fallout*) are down. Containers are piled up at some ports and limited in others.

INDIA'S EXPORT VOLUME GREW BY 24% BETWEEN JULY AND SEPTEMBER, WHILE ITS IMPORTS REDUCED BY 28%

Container Shipping Lines Association (*CSLA*), Executive Director Sunil Vaswani adds, "As a result, the shipping lines, which, until July 2020, used to ship out empty containers from India, had to start repositioning empty boxes into the country and move them inland to demand locations at a huge cost for the shipping lines."

This problem has been worsened by other factors:

(i) Congested railroad system in the US is further leading to delays;
(ii) Around 25% dip in the capacity of shipping companies owing to low demand due to the pandemic;
(iii) Halt in clearing of containers

between March 23 to April 15;
(iv) Quarantining of vessels due to added checks on Chinese shipments and an overall negative outlook for China; and
(v) Customs (*Administration of Rules of Origin under Trade Agreements*) Rules, 2020, and the consequent delays in shipments.

This has started taking a toll on India's exports and imports across sectors. According to Ravi K Passi, Chairman-EPCH, for instance, the paucity of containers is proving to be a major roadblock for India's handicraft exporters.

Jaipur-based logistics start-up Gxpress, which needs 10-15 containers every week for sending shipments to the US, said that it was paying nearly US$ 3,600 for each container in September, up 40% since the previous month. It is being reported that shipping liners have raised rates by nearly 60% over three months for moving a container to the US. Similarly, in the case of African ports, the prices have more than doubled.

RISING AGAINST THE LOW TIDE

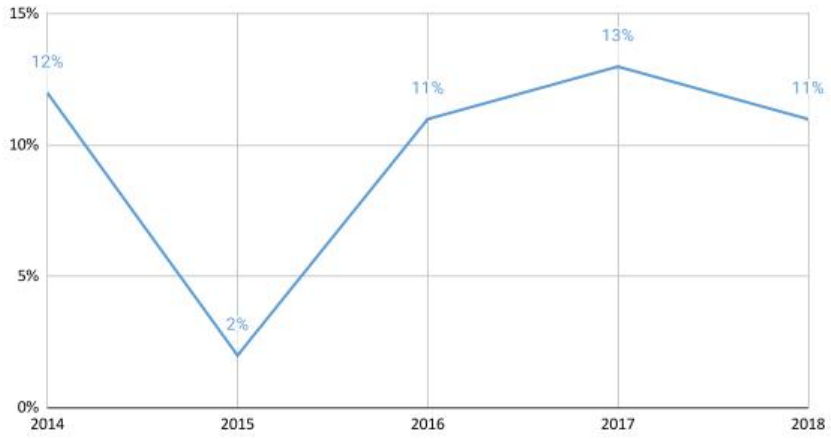
One of the most obvious solutions to avoid this kind of situation is raising the domestic production of containers in India, as pointed out by Vivek Agarwal, MD, Capital Ventures Pvt. Ltd.

India is the world's second largest producer of steel, with production at 111.245 million tonnes (*MT*) in 2019, and has a huge pool of labour. While these factors work in India's favour, it should focus on becoming a larger 'steel recycler'.

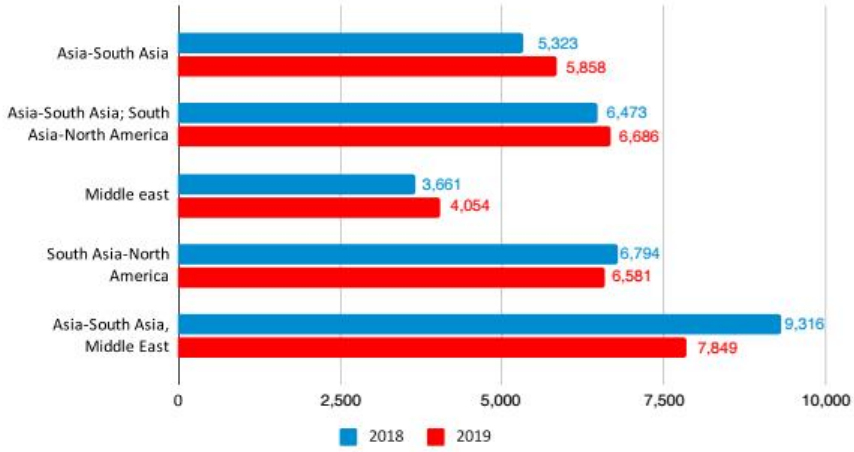
Higher prices of the metal in India as compared to China make it an uncompetitive location for container production, as it accounts for more than 50% of raw material costs. In this regard, Praveen Vashistha, founder of Gxpress, says, "To boost exports, India needs to have a robust logistics system. The government should support container manufacturers in the country & those firms that want to start their own industrial corridors. The process of granting permissions that are involved in the process of starting a company should be also made easier. This will encourage firms to invest in the sector & spur container production.

In the immediate context, expediting customs clearances and efficiently managing the lopsided distribution of containers at ports would also help in resolving the issue. The industry is also of the opinion that there should be a nodal regulatory agency for the shipping sector and the proposed National Logistics Efficiency Advancement Predictability and Safety (*NLEAPS*) Act should be formulated and implemented soon to protect the export-import sector from such abrupt changes. ■

CONTAINER TRAFFIC IN INDIA OVER THE LAST FEW YEARS



TRADE ROUTE-WISE AVERAGE VESSEL SIZE AT INDIAN PORTS



Source: Indian Container Market Report, 2019; figures in TEU

GOVERNMENT SHOULD SUPPORT CONTAINER MANUFACTURERS IN THE COUNTRY WHO WANT TO START THEIR OWN INDUSTRIAL CORRIDORS.

On the innovation trail?

As the global R&D ecosystem moves towards a more collaborative approach and possibly accelerated new drug development cycles, India needs to reorient its pharma industry to become an innovation hub.

BY VIRAT BAHRI

Indian pharma has long been a leading supplier of generics drugs. The industry provides 20% of the global supply of generics drugs by volume and 62% of the global supply of vaccines. Around 60,000 Indian generic brands cover 60 therapeutic categories and manufacture over 500 different Active Pharmaceutical Ingredients (*APIs*).

As is evident from efforts to bring out a vaccine for COVID-19 over the past year, India is pivotal to ensuring global access, as the leading producer of vaccines in the world. India 's first indigenously developed vaccine Covaxin by Bharat Biotech received approval from the Drugs Controller General of India in early January.

The global pharma R&D ecosystem has been going through a massive upheaval in the midst of the pandemic. But innovation is equally a point of introspection for Indian pharma companies. Over the years, the debate has intensified on how it has become critical to improve India's capabilities as well as agility in terms of R&D, be it in terms of new pharmaceutical products, specialty generic complex drugs, biologics or biosimilars. But given that India has not yet been able to develop a globally competitive R&D ecosystem, it could cost the industry several lucrative opportunities to hit the big league, particularly in context of the post-COVID period.

The Indian Pharmaceutical Alliance (*IPA*) and McKinsey jointly released a report *The Indian pharmaceutical industry – the way forward* in 2019, which stresses that India needs to be an innovation leader by 2030, if it aspires for global leadership in the pharma industry. The report states that "the industry can aspire to build a strong innovation pipeline (*with three to five new molecular entities launched or in late clinical trial phases and 10-12 incremental innovation launches per year by 2030*) and enhance Indian pharma's significance beyond generics, to biologics, new drug development as well as incremental innovations.

This can help it tap new lucrative opportunities; for instance, biosimilars is projected to be worth US$ 60 billion by 2030. By just capturing around 10% of this share, the industry can grow by 13%, according to the report.

THE MISSING INGREDIENTS

So far, the Indian pharma industry has a rather unenviable record on R&D. The report concludes that this is in part due to a limited government-funded research ecosystem. Moreover, India has just around 2,000 PhD students in pharmacy institutes, placing it unfavourably vis-a-vis a competitor like the US, which has 15,000 students enrolled.

Furthermore, achieving the goal requires a more conducive interface between the government and industry for the success of innovation-focused research initiatives. There is also a need to simplify regulation to ensure smoother processes and secure participation from government institutes in clinical trials.

To crown it all, Indian pharma companies are also not very aggressive in terms of investments into R&D. An analysis of 10 leading pharma firms in India shows an average R&D investment of 8.5% of sales in FY '18, which was

forecasted to decline to 8.4% in FY'20.

On the other hand, the average R&D investment for pharma firms is pegged at around 17% of revenue globally, which is only bettered by the semiconductor industry. Leaders like AstraZeneca, Eli Lilly and Roche spent even more, in the range of 20-25% of revenues. R&D intensity remains consistently high for competing countries, particularly the US, which accounts for over half of global pharma R&D investments.

The reasons can be better understood when we look at the broad number-driven perspective on R&D outcomes. New drug development typically requires investments of US$ 10-12 billion, and an average development time of 10-12 years. Yet, only around 8% of developed drugs get regulatory approval, which makes the process inherently risky with a low probability of the desired upside.

The industry is looking at ways to reduce both the development times and costs, and improve chances of successful applications. These include interventions like in-silico, computational modelling and proteomics.

Digitisation of labs can be quite fruitful in streamlining and seamlessly integrating the entire pharma product life cycle process, besides improving quality controls, efficiency and cost optimization, according to Dr Chaitanya Kumar Koduri, Associate Director - International Public Policy, Advocacy and Engagement, United States Pharmacopeia.

NEW REALITIES POST-COVID-19

Experts are confident that global efforts to fast track the vaccine development and approval process itself in COVID times could lead to a disruptive transformation in the new drug development process in the coming years. One instance is the use of real world evidence (*RWE*) to identify treatments and fast track the process. Sanjay Singh, Partner, Deal Advisory, KPMG India, affirms, "Drug and vaccine development effort in response to the COVID-19 pandemic is unprecedented in terms of scale and speed."

This could be a harbinger of changes in the traditional approach to more parallel, collaborative and adaptive development mechanisms. Such an approach will involve more closer coordination and engagement between actors, including the industry, regulators, policymakers, funders, public health bodies and governments.

De-centralisation of clinical trials has received a major push during the pandemic. Trials have already been shifting to a more patient-centric model. An example is the use of an oral therapy for patients rather than IV. This ensures they do not have to stay in the hospital for half a day to a complete day before they can go home. A tertiary care network of nurses can also be deployed to assist them from the comfort of their homes.

Digitisation was already an evolving trend, which was accelerated due to the necessity to have minimum patients in the hospitals amidst the pandemic.

THE PHARMA INDUSTRY IS LOOKING AT WAYS TO REDUCE R&D DEVELOPMENT TIMES AND COSTS, AND IMPROVE CHANCES OF SUCCESS

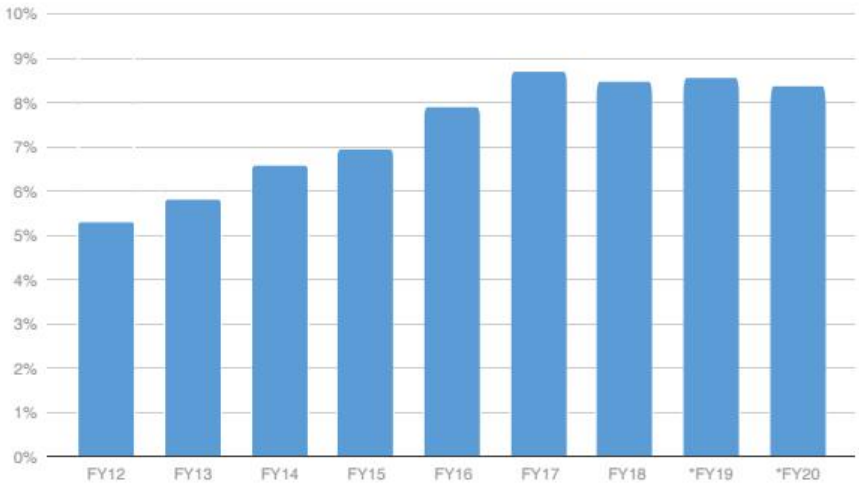
Clinical trial operations have also been severely disrupted due to COVID-19. To manage the disruption, clinical leaders are focusing on options to reduce patient and site burden, including remote patient engagement, in-home nurse visits, shipping investigational medicinal products directly to patients (*with appropriate support*), and conducting site-level outreach to ensure monitoring.

A number of companies have shifted to distributed trials with remote monitoring and source document verification; with tools and technologies such as eConsent, wearables, telehealth, telemedicine, and remote SDV.

The role of technologies like artificial intelligence is also getting very prominent amidst the crisis. What's more, AI/ML has also been deployed in the vaccine development process against COVID-19. The systems search current literature on disease, study the DNA and structure of the virus and then consider the suitability of various drugs. This is where natural language processing (*NLP*) comes in handy.

Dr Sriparna Saha, IIT Patna, affirms, "Techniques can be applied in building biomedical

R&D INVESTMENTS AS SHARE OF REVENUE FOR INDIAN PHARMA



*Source: Statista, Data analysed for 10 leading companies; *Forecast*

knowledge graphs, which illustrate the relationship between different biological entities (*such as drugs and proteins*) generated after processing several scientific articles. These disruptive trends in pharma R&D could act as an opportunity for Indian pharma companies to build a more sustainable R&D ecosystem.

Finally, the pandemic is expected to lead to a surge in interest towards treatment of infectious diseases. So far, government entities like U.S. National Institute of Allergy and Infectious Diseases, and philanthropic organizations like Bill & Melinda Gates Foundation have led this research. Infectious disease programs account for less than 2% of overall development pipeline. Considering the huge economic cost of the pandemic, there are indeed expectations of a major transformation in the approach.

INSURING PROGRESS

How can India make use of these emerging opportunities, and leverage the prospects of a shift in traditional R&D dynamics? Dr P. D. Vaghela, former Secretary, Department of Pharmaceuticals, revealed during a virtual event in early August, 2020 that the government is planning to come up with an exclusive R&D policy for Indian pharma, to bring it at par with the industry in US and Europe. He also highlighted how, in the absence of a strong push towards new drug development, India's pharma industry ranked 3rd largest globally by volume but 13th largest by value.

Towards this objective, the government is looking for ways to incentivise scientists for breakthrough innovations, even if they are on its own payrolls. In addition, it is planning to set up three National Centres of Excellence (*CoE*) for drugs discovery and medical devices.

RAMPING UP HEALTH INSURANCE PENETRATION & COVERAGE FOR CHRONIC & RARE DISEASES COULD BOOST PHARMA R&D

One area of concern is that Indian companies have moved or are partly looking to move their R&D bases to the US due to 10% tax arbitrage. Well targeted incentives will be important to boost R&D, considering the huge costs involved. The industry has suggested that rather than the regime that provides 200% tax on R&D investments, the government could exempt revenues from patented and commercialised drugs from income tax.

Strong price control mechanisms, generic prescriptions and ban on fixed dose combinations make it less attractive for R&D investment for drugs to treat chronic and rare diseases, according to Sanjay Singh of KPMG. While this approach is understandable given that India is a developing country, ramping up penetration of health insurance can significantly bring down treatment costs for the masses. If health insurance adequately covers such ailments, it would encourage R&D spends in new & better drugs, as India becomes a more lucrative market for them. ■

'SCIENTIFIC' DISCORD IN AGRI TRADE

Maximum residue limits are stipulated to monitor illegal or excess use of pesticides in food/animal feeds and ensure compliance with registered labels. But marked variations and constant changes in MRL regulations across markets cause significant uncertainty & panic among exporters. India needs to have a comprehensive action plan to deal with these issues.

BY VIRAT BAHRI

The ever rising complexities in global trade can make exports often appear like a zero sum game. Regional trade agreements and overall impact of Uruguay round agreements have reduced many tariffs and subsidy- related constraints to free trade. But on the other hand, non-tariff measures have been on a constant rise.

Number of SPS measures notified to the WTO has increased exponentially and standards have consistently evolved in national, international and individual supply chains. This is even more prominent in major markets like the US, the EU and Japan, where SPS requirements such as maximum residue limits of various Plant Protection Products (*PPPs*) and levels of contamination have grown more and more stringent.

MRL limits are defined as safe limits of the maximum expected level of a pesticide (*or any other agricultural chemical*) on a food commodity after its safe and authorized use. These limits are food product specific and meant to serve as monitoring tools to prevent illegal and/or excessive use of a pesticide and ensure compliance with the registered label.

Also, foods that contain residues above MRL aren't necessarily dangerous, as long as the calculated acute reference dose is not exceeded. Actually, they are set at levels at least low enough to ensure that even high-level consumers will not ingest more than the acceptable daily intake (*ADI*) if they eat large quantities of every food type containing the residues at the MRL for that food type.

Although the WTO requires its members to base their MRL measures on Codex standards, individual countries can deviate from these standards if they give a relevant scientific justification. It has been alleged, however, that many countries impose stringent MRL measures deliberately as a protectionist measure for restricting trade. Numerous such cases are reported to the WTO regularly. In early 2020, India asked the EU to reduce non-tariff barriers such as MRL limits on food products, which had impacted exports of rice, peanuts, chillies and spices, tea, grapes, vegetables and sea food.

FARMERS ARE COMPELLED TO REGULARLY ADJUST PRACTICES IN ACCORDANCE WITH EVOLVING MRL REGULATIONS

SCIENCE VS TRADE

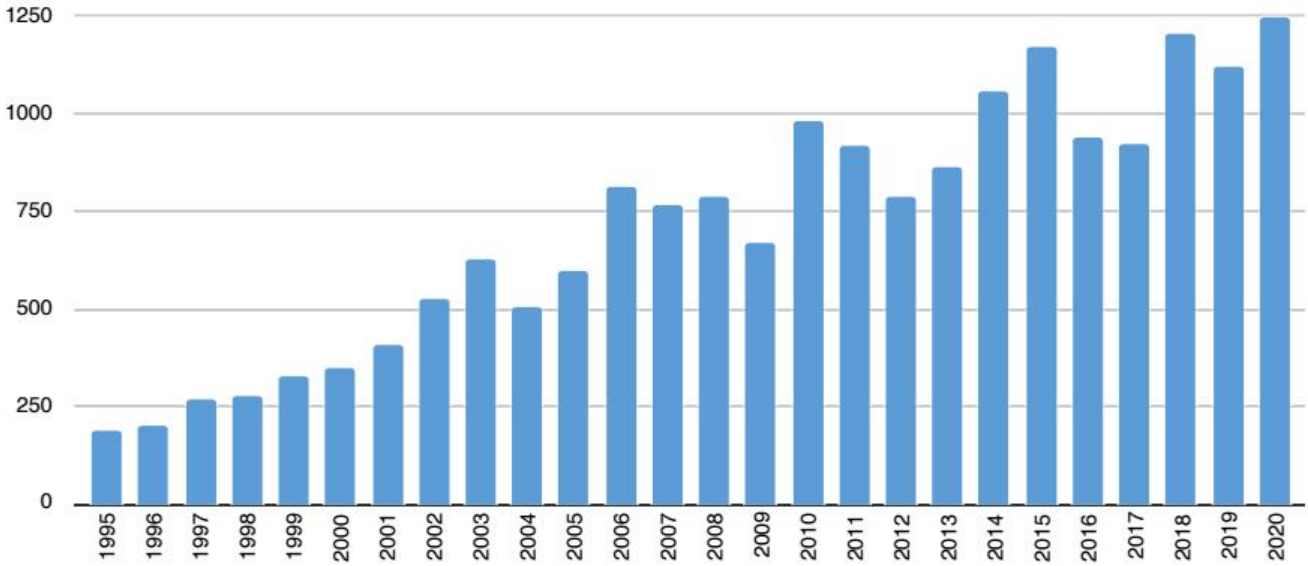
To be fair, scientific research is an ongoing process, due to which MRLs cannot be fixed forever. Re-evaluation/resetting is normal, based on availability of new toxicological/ safety and monitoring data on pesticide residues.

However, farmers are compelled to regularly adjust production practices in accordance with evolving policies and regulations on MRLs of pesticides on agricultural products. The frequent changes, lack of effective communication channels and variations across export markets make compliance a highly complex matter, consequently impacting both their incomes and ability to access export markets.

When MRLs are too low, they may get difficult for farmers to meet, while still protecting their crops from harmful pests and diseases. On the other hand, a missing MRL for a pesticide/crop combination could imply automatic prohibition and catch exporters unawares.

Finally, shifting or unclear policies in importing markets complicate production and export decisions of farmers who rely on transparency and predictability in the trading system.

SPS NOTIFICATIONS BY WTO MEMBER COUNTRIES



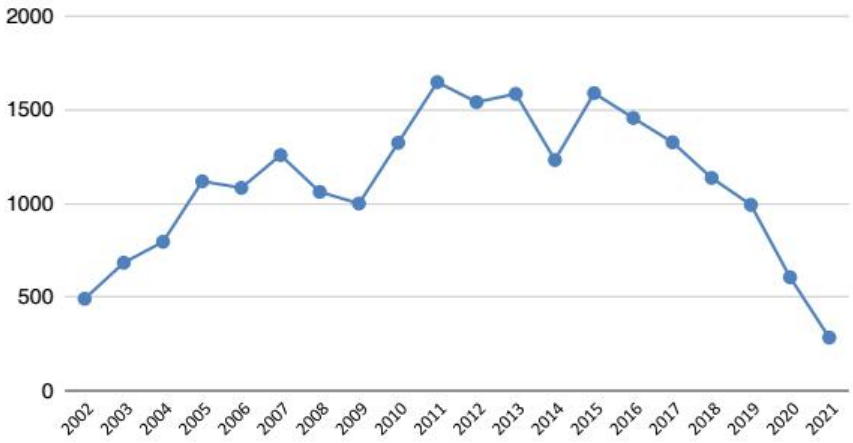
Source: WTO; figures pertain to regular notifications.

DILEMMA FOR INDIAN FIRMS

Indian F&B players have faced numerous issues based on MRL regulations over the past few years. Exports of products including fresh fruits, spices, rice, tea and marine products have faced rejections or bans in markets such as the US, Vietnam, the EU, Saudi Arabia, Japan and Bhutan, due to objections raised on health and food safety standards. Some of the prominent cases are listed below:

- *EU rejected table grapes consignments from India in 2010 and 2015, citing traces of chlormequat chloride, a plant growth regulator.*
- *In August 2014, EU introduced "specific conditions" on import of okra and curry leaves from India. Every consignment required a certificate, confirming that the produce had been sampled and analysed for stipulated MRL limits.*
- *From January 2018, the EU also rejected imports of rice with levels of tricyclazole, which is a common fungicide, exceeding 0.01 ppm (1 mg/100 kg), compared to the earlier norm of 1 ppm or 1 mg/kg. In comparison, other developed markets like US and Japan have MRL levels of 3 ppm.*
- *The EU increased the inspection frequency of Indian shrimp consignments for antibiotic residues from 10-50%, adding higher time & cost burden for exporters.*
- *Saudi Arabia actually cited pesticide levels beyond its own MRLs to block shipments of green chillies and cardamom from India.*
- *Recently, Egypt introduced checks on agriculture produce against 450 pesticides, which resulted in non-clearance of containers of rice and spices from India at Egyptian ports.*

BORDER REFUSALS BY US FOR HUMAN FOOD PRODUCTS FROM INDIA



Source: USFDA, data is for fiscal years

According to experts, recent developments in Egypt could point towards a worrying trend of such arbitrary standards now being imposed by developing countries, possibly leading to larger losses for Indian exports in these markets.

Vinod Kumar Kaul, Executive Director, AIREA, affirms that Middle East markets like Egypt and Oman are indeed aligning themselves increasingly to EU standards. But he also adds, "The issue is that while we are aware of the EU norms, there is less clarity with Middle East countries on their norms and pesticides they are testing."

In Codex, for example, norms are defined for 23 pesticides in rice. But Saudi Arabia had 124 chemicals in their list last year. In 2020, they reduced it to 38. Some of these markets follow a mixed approach, stating that they will follow Codex norms in some cases, and EU/US norms where Codex is not available.

So this creates a lot of confusion.

New tests have been done by UAE and Oman recently, for instance, and specific inputs are not available, according to industry insiders. This creates unnecessary panic in trade.

ROAD TO COMPLIANCE

Even when compliance norms are known, fulfilling them is not a simple task. For starters, it is not practically possible for exporters to ascertain or ensure MRL limits in farm produce at all times. Consider the case of rice production in India, which involves millions of farmers with small land holdings, and one can appreciate the enormity of the task.

It can take upto two years for traces of a pesticide to come down, after their use has been discontinued. In fact, it can be worse. Krishnendu Chatterjee, Senior VP, Darjeeling Organic Tea Estates Pvt Ltd, comments, "One needs to understand that most of the chemicals used commonly in agriculture are persistent in their derivatives; these derivatives are nagging and keep on coming back in harvest even after years of use, albeit in trace quantities." Even in organic farming, it is possible to have chemicals like Anthraquinone and Nicotine come in from the environment and show up in tests, for which honest producers may also have to suffer.

Moreover, it is not possible to align standards as per every market, considering the differences in weather conditions, soil types, pests, etc in different farming regions. In a tropical region like India, use of pesticides and insecticides is unavoidable.

It may happen that a particular pesticide is used in India but not in a competing country. For instance, Pakistan is a competitor for Basmati Rice. When the EU market came up with the change in norms for tricyclazole, exporters from Pakistan were at an advantage, since that particular pesticide is not used by farmers in Pakistan.

While such extraneous factors are not necessarily in your control, it is desirable to equip farmers with the requisite technology, training and access to the right inputs, including seeds and fertilisers, to meet at least the minimum conditions imposed by importing countries. Prof Arpita Mukherjee, ICRIER, opines, "India needs to ban chemical fertilizers and pesticides that are banned in key importing markets, good package of practices should be shared with farmers, extension workers should be trained on MRL requirements and regular data should be collected from the fields. All agencies in the supply chain from exports, to laboratories and certification bodies have to be trained and informed about changes in MRL levels."

A careful analysis needs to be done for each product and market, to ascertain the bare minimum standards that need to be met. Only then, we can proceed to develop the necessarily mechanism to ensure compliance. Mapping of product/ region and markets can also be done so that farmers know which market their specific product can be exported to.

For instance, we did an analysis of issues faced by Indian food shipments headed for US and EU in 2020 alone. The data presented by the two countries provides insights into the concerns they have on Indian food products and chemicals used. Some of the primary reasons for rejections in the US are presence of salmonella, colour additives/ artificial colouring, poisonous substance (*like chloramphenicol*), presence of pesticide/chemical residues as well as misbranding.

On the other hand, EU gives a comprehensive list of pesticides that have led to border issues, as given in the table. Sesame seeds originating from India suffered several recalls in 2020 due to high levels of ethylene oxide, which, according to regulators, was over 1,000 times the MRL of 0.05 mg/kg in some shipments. The chemical was used to inhibit the growth of Salmonella during storage of sesame seeds in India, but it is not approved as an active substance for

Sesame seeds from India have suffered a series of recalls in the EU in 2020 due to presence of traces of ethylene oxide, which is used to inhibit salmonella growth

use in plant protection products.

Product traceability is one potent way to overcome SPS barriers, as seen in the case of mangoes, fresh grapes, peanuts and eggplant exports. After facing multiple bans due to MRL issues, the grape industry engaged in comprehensive interactions with all stakeholders.

This helped them understand the most appropriate crop management practices to attain desired MRLs. They also expanded the list of chemicals being tested and ensured traceability to the farm level. Azhar Tambuwala, Director, Sahyadri Exports, emphasises, "As a result of these efforts, grapes from India are supposed to be the safest. Supermarkets that retail our products also say that India has the best system to provide you residue-free grapes."

For instances like the present one for Egypt, India can discuss bilaterally and ask for an extension. The issue with Saudi Arabia was resolved amicably in a similar manner. At the same time, where the norms lack scientific basis, India needs to aggressively counter them, either bilaterally or through the WTO using credible research and scientific data. Also, Prof Sunitha Raju, IIFT, suggests, "Countries have entered into agreements where there is mutual recognition of testing procedures. As a large country (*not a third world country*) India needs to exercise and engage in these negotiations. If we can derive standards in line with international standards (*CODEX*) then we should be able to engage in Mutual Recognition Agreements."

From the long term perspective, the Ministry of Agriculture must institute structural reforms in farming practices across regions and crop types to ascertain and address the mismatch with internationally accepted standards. The general policy direction should be encouraging farmers to lower the use of pesticides & chemicals to minimise incidence of such bans.

To ensure compliance to norms, comprehensive infrastructure needs to be set up, from uniformity in laboratory testing processes, to a proper supply chain for perishables and proper storage for food produce. Prof Arpita Mukherjee, ICRIER, adds, "A single regulatory body for exports will ensure accountability and if there are multiple bodies, there is a need to investigate the gap in coordination if any. Also we need to understand how such exports have been cleared at the port of exit and why are they not meeting the importing country requirements."

This problem of internal harmonisation is also cited by Sujit Patra, Secretary, Indian Tea Association, who points out that FSSAI has included 32 chemicals with MRLs for tea. But under Plant Protection Code (*PPC*) of Tea Board, there are 45 chemicals with no MRL. He therefore opines, "Harmonization between PPC and FSSAI authorized chemicals is imperative to avoid any confusion and give definitive direction to the tea industry." Simultaneously, it is important to have a strong regulatory body to monitor imports as well; where India should impose stringent standards.

Proactive redressal of MRL issues is critical for India as it aspires to be a leading exporter of food products to the world in the coming years. Besides the immediate income loss and continued uncertainty for concerned exporters, these incidents also cause serious and unwarranted damage to brand equity for the *Made in India* label in the long run. ■

PESTICIDE RESIDUE NOTIFICATIONS FOR INDIAN FOOD PRODUCTS IN EU IN 2020

Product Category	Number of notifications	Products	Chemicals detected
Cereals and Bakery products	24	Basmati Rice, rice	Thiamethoxam, tricyclazole, carbendazim, buprofezin
Fruits & vegetables	8	Hyacinth beans, guar beans, seedless grapes, table grapes, chillies, frozen curry leaves, frozen diced red chilli puree	Dimethoate, omethoate, monocrotophos, methomyl, thiodicarb, chlorothalonil, fipronil, chlorpyrifos, methamidophos, acephate, propargite, triazophos
Herbs & spices	3	Dried fenugreek leaves	Chlorpyrifos, thiamethoxam
Nuts, nut products and seeds	257	Sesame seeds	Ethylene oxide, chloroethanol
Soups, broths, sauces and condiments	2	Gomasio with nori seaweed; Sesame oil	Ethylene oxide
Other food products/mixed	3	Bakery mix, tobacco-free nicotine pouches	Ethylene oxide nicotine

Source: RASFF Portal; data from January 1, 2020 to December 20, 2020

SESAME SEEDS ORIGINATING FROM INDIA SUFFERED SEVERAL RECALLS IN 2020 DUE TO HIGH LEVELS OF ETHYLENE OXIDE

Environmental pollution is a major issue affecting organic producers

Krishnendu Chatterjee, Sr. VP – Centre of Excellence at Darjeeling Organic Tea Estates Pvt. Ltd (*DOTEPL*), explains how Indian organic food producers are also facing MRL challenges in markets like EU, even though these may largely on account of environmental factors.

On the surface, the topic of maximum residue limits does not seem relevant to organic products, as there are no chemicals involved in the production process. At Darjeeling Organic Tea Estates Private Limited (*DOTEPL*), we are dealing with 100% organic products produced in our tea estates. We have 17 of them in Assam and Darjeeling and they're all certified in multiple organic standards since many years. But the issues and challenges of MRLs go much deeper.

One needs to understand that most chemicals used commonly in agriculture are persistent in their derivatives; these derivatives are nagging and keep on coming back in the harvest even after years of use, albeit in trace quantities.

You cannot always be sure that a chemical will becomes harmless upon degradation. In fact, there can be more harmful chemical regeneration. Hypothetically if you are using Glyphosate in 2020, it may well happen that in 2029 or so, your product may suddenly contain traces of Glyphosate or AMPA. And AMPA is probably more harmful than glyphosate itself.

So, I may regard myself to be an honest organic producer. But that doesn't guarantee that my product would always have zero residues or the desired residue levels. As such, there is nothing called organic MRLs, but it is expected that nothing beyond 0.01 mg/kg (*detectable limit*) will ever be detected in organic products. Scientific committees taking these decisions understand that organic products cannot have any chemical contaminations to be detectable beyond 0.01 mg/kg.

Generally we have to pluck around four and half kg of green-leaves to make one kg of tea. Findings of the laboratory after testing the ready tea have to be divided by 4.5 (*conversion factor*) to arrive at what magnitude of a chemical is found or, if at all, has been directly used in the tea. So, based on this logic and after applying the error factor (*MU-measurement of uncertainty in the labs*), lab testing is done to arrive at a conclusion. This is a big chapter with highly debatable provisions.

Krishnendu Chatterjee
Sr. VP - Centre of Excellence
Darjeeling Organic Tea Estates Pvt. Ltd.

Another major issue across the world is environmental pollution like AQ (*Anthraquinone*), BP (*Biphenyl*), PAH (*Polycyclic aromatic hydrocarbons*), nicotine etc. For example, one would reckon that nicotine only comes from direct use of tobacco plants in different forms like chewing tobacco or smoking cigarettes or bidi. Nicotine, however, exists in many plants, especially in Solanaceae (*potato, brinjal*), where it repels external predators.

You have to understand that nicotine does not only come from smoking or chewing tobacco or the people who handle these. If a person has smoked or chewed tobacco right before handling the tea plants with bare hands, the nicotine will definitely transfer to the plants. But the issue is that even the consumption of tobacco-based products by few food handlers might not lead to the high level of Nicotine contamination (*60mg/kg of Nicotine, which happens to be the acceptable limit in EU for Tea*).

We have done enough studies to ascertain that nicotine is already present in the air, especially in polluting cities, areas of construction and tarmacking of roads, where coal is burnt profusely etc. In one Japanese magazine, scientists claimed that when tea trees are under stress, they can produce nicotine as a secondary metabolite to protect them from external pests.

So, we haven't understood the full story behind this, but we know that nicotine is environmental and habitual. It can come from different weeds and sources. So, it will be unfair to blame the producers. That is why today, the acceptable nicotine levels for tea are set at a reasonable 60 mg per kg. EU was discussing about reducing it to 10 mg per kg, which is now in abeyance.

As a producer of organic tea, I don't feel threatened by the reforms that Indian government is bringing out. But at the same time, my issue is that the European Commission doesn't understand the perspective of Indian standards. So, you have to continuously look at the limits of pollutants and how they're approaching them. ■

Indian grape exports: Creating opportunity from crisis

Marred by shocks in the export market due to MRL issues, the Indian grape industry worked in collaboration with stakeholders to build a robust system that guides farmers and ensures traceability right down to the farm level.

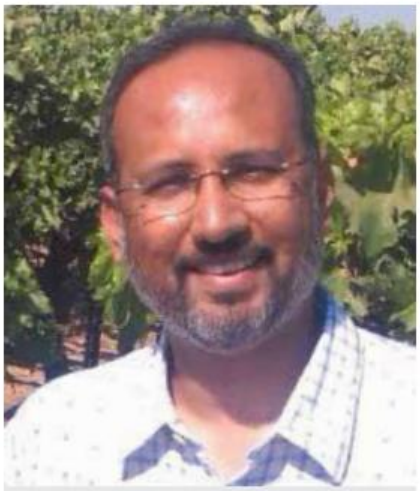
In the grape industry, we have had serious issues with MRLs or maximum residue limits, which led to major changes and adaption of systems by stakeholders to make it the best in the world today. This system is now used as a base and platform for other crops in India too.

In the beginning, i.e. early 1990s to 2002, nobody was testing any export consignments in India. When the issue first cropped up in 2002, we raised the issue to the government and highlighted the need for some regulation/policies/ intervention, else the industry would collapse. This led to a series of focused interactions with all stakeholders, led by APEDA, NRCG (*National Research Center for Grape*), trade & grower regulatory bodies, agronomists, etc.

Indian labs did not have testing equipment in 2002. These machines were then subsidised and installed in 6-7 appointed laboratories. People were sent to laboratories in Europe to learn how to test via LCMS and GCMS methods on the new machines. The labs & NRC stay constantly in touch with the European MRL division, as they keep making changes. But they also give us a year to adapt our crop management practices.

Initially, authorities decided that there are only 90-95 chemicals applicable in crop management of grapes, even as EU norms covered 400. They felt that expanding the testing range beyond this would unnecessarily add to costs. This turned out to be an error.

Lab results in the EU started turning out results of chemicals, which are not used in grape production normally in India and not even in our country's allowed



Azhar Tambuwala
Director of Marketing
Sahyadri Farms

pesticide list. This prompted testing of an increased number of chemicals to around 120. Then in 2010 we had another major problem with CCC or Chlormequat. It was then decided that all 400+ chemicals will be tested.

There are many opinions about MRLs, which may or may not seem logical. For instance, they have different MRLs for grapes, bananas, pomegranates for the same chemical. Grapes are eaten directly, pomegranate seeds are inside but the skin is tested and similarly with bananas, you eat the fruit inside. Many chemicals on which sufficient research is not available are set below detection limits.

However, it's the EU law and we have to abide to serve our customers there. To further complicate matters, supermarkets in competition with each other, have set their own limits, e.g. they want 33% or 70% of EU MRL limits and only 5 maximum chemicals can be detected. This makes it even tougher to export.

Our key learnings here are that with different crops, there are many factors at play when it comes to meeting MRL standards. What are the spraying schedules or crop management standards? Which pest attacks the crop and when? When does it rain? Is it an annual crop or a biannual crop? Then again, is it a kharif or rabi crop? A study of crop management systems is critical.

MRLs are also dependent on the country you are exporting to. This requires collaborative involvement of exporters, growers, government, trade promotion agencies and agronomists. Agronomists can even tell you that you need to spray this chemical at this stage, and if you follow 'x' schedule, you will be able to send the crop to 'y' market.

There has to be a discipline maintained in every batch from a farmer. Strict rules must be followed on registration, sampling and testing. We have improved this entire system over the years and it's all online. Any farmer who is producing for exports has to be registered with the programme & the local Agri Officer has to get involved. All farms must be GAP certified.

To ensure that the sample is from the field in question, laboratories have been given the responsibility of taking the sample themselves. All information of the farmer is online, as is the report from the laboratory, and you cannot export without the phyto.

This way, the possibility of misuse or cheating is to a minimum. In the interest of their own business, people follow the system, and this ensures predictability for all players across the value chain. ■

Towards a post-pandemic resurrection

Travel industry has been among the worst casualties of the pandemic. To emerge out of the crisis, travel bubbles, domestic tourism & touchless travel are possible course corrections.

BY NIKHAAR GOGNA

The pandemic has brought about significant disruptions in the global economy, coupled with a widespread unrest pertaining to an unsettling fear about the loss of lives & livelihoods. This international health exigency, accompanied by travel restrictions, lockdowns, quarantines and border closures has proved to be particularly grim for the international travel and tourism industry.

This is a major concern considering the importance of tourism. In 2019, the sector accounted for around 29% of services exports and about 300 million jobs globally. World Travel and Tourism Council has cautioned that the pandemic could cut 50 million of them. This includes around 30 million in Asia, 7 million in Europe, 5 million in the Americas and the rest in other continents.

MEASURING THE IMPACT

The World Tourism Barometer by the United Nations World Tourism Organization (*UNWTO*) states that there was a 72% year-on-year dip in international tourist arrivals during January-October, 2020. The decline implies 900 million fewer arrivals when compared to the same period in 2019 and a massive loss of US$ 935 billion in export revenues from international tourism. This is over 10 times the loss in 2009 due to the global economic crisis. The barometer notes that Asia Pacific region has been the most affected with 82% drop in arrivals during the same period.

IN MARCH 2020, THERE WAS A 66.4% YEAR-ON-YEAR DIP IN FOREIGN TOURIST ARRIVALS IN INDIA DUE TO COVID-19 TRAVEL CURBS.

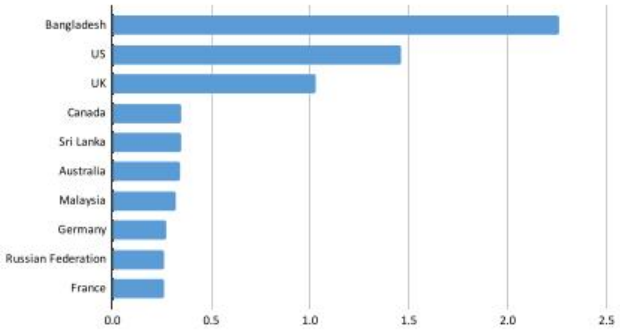
As confirmed by the Ministry of Tourism, there was a significant drop in foreign tourist arrivals (*FTAs*) in India between March-June 2020. While in March 2019, 978,236 foreign tourists came to India; in March 2020, there was a 66.4% dip. Subsequently, there was a 100% drop as due to complete curbs on international travel.

The Federation of Associations in Indian Tourism and Hospitality (*FAITH*) estimates a loss of around Rs 15 trillion for the Indian tourism sector in FY21. The industry body also anticipates around 40 million cumulative job losses for the full year in organized and unorganized categories.

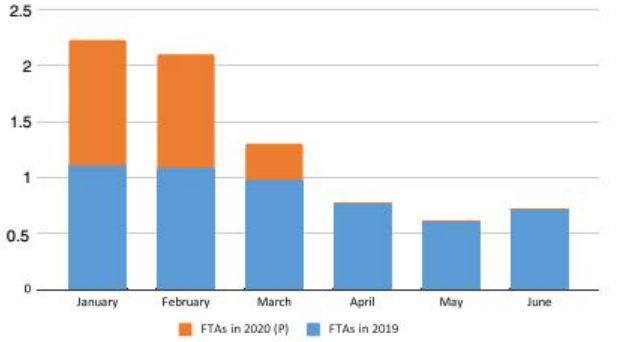
RESURRECTING THE INDUSTRY

India, which ranks 34th (*of 140 countries*) in the Travel and Tourism Competitiveness Index (*TTCI*) 2019 by the World Economic Forum, should, for now, focus heavily on domestic tourism, as

TOP 10 SOURCES OF FTAS IN INDIA IN 2018



FTAS IN THE FIRST 6 MONTHS OF 2019 & 2020



Source: Ministry of Tourism; FTA figures in million

travel restrictions remain and concerns about a new variant of SARS-CoV-2 emerge. In this regard, the central and state governments have already started taking some measures to revive demand. For example, the Goan government has made a provision for setting up new tourism board, which will be the backbone for all decisions pertaining to planning, development and marketing of tourism in Goa.

Just like the phenomenon of revenge shopping, Indians are showing an increased propensity to travel locally as restrictions ease. This can help cushion the impact of the steep decline in international travel. The central government also cleared the Leave travel Concession (*LTC*) cash voucher scheme for State Government/ Private sector employees who are entitled to LTC.

However, any effort to help the sector reboot should incorporate mechanisms aimed at restoring the confidence of travellers. Strict enforcement of safety & hygiene protocols such as mandating thermal screenings & wearing of PPEs for all those who board a flight or enter an airport, can be some important ways to do this. A Swachh Bharat Ranking for tourists will also be a welcome move.

Another move that is likely to go a long way in establishing confidence among travellers is offering COVID-19 travel insurance. While the country has started offering COVID-19 health insurance, Rajiv Mehra, Vice President of Indian Association of Tour Operators, points out, "Most

THIS CRISIS COULD BE THE PERFECT OPPORTUNITY TO HELP THE TOURISM SECTOR EMBRACE THE CONCEPT OF TOUCHLESS TRAVEL

COVID-19 health insurances available in India cover only those people who are under the age of 65. In India, tourists who come from abroad are typically above the age of 60-65."

India should also leverage virtual technology and promote international tourism. The Ministry of Tourism through its "Dekho Apna Desh" webinars is already working towards this initiative. Partnering with international universities, particularly departments of history and architecture & international religious organisations could also spur an interest in the country. India could also take a cue from Switzerland's 'Dream Now Travel Later', helping travellers to plan holiday bucket lists for the future.

India should also work to strengthen its global position as a credible destination for medical tourism. "As restrictions on international air travel begin to ease from select countries, adequate support from the Government will also be needed to further facilitate medical travel, with SOPs and safety protocols across each stage of the patients' care continuum," stated Shobana Kamineni, Executive Vice-Chairperson, Apollo Hospitals Enterprise in an interaction with *The Print*.

Lastly, this crisis is the perfect opportunity to help the tourism sector embrace touchless travel. Digital health passports will be one example of this. Apple and Google, for example, have finalized a contact-tracing software scheme to help automate the process of health scans & screenings. Collaborative relationships with diverse stakeholders across the spectrum and automating processes to minimise human intervention hold the key to move from survival to revival in the coming quarters. ■

An early riser in the post-pandemic race

Brazil has shown a relatively faster industrial revival post-COVID led by a strong policy stimulus. But will this prove to be a sound approach?

BY VAISHALI BHARADWAJ

Brazil is among the most severely affected countries by COVID-19 pandemic with around 8.26 million cases and 0.21 million deaths. However, in spite of the severe impact, the country has recovered relatively better as compared to other major economies. Brazil's manufacturing purchasing manager index (*PMI*) released by IHS Markit was recorded at 66.7 in October 2020 and it has been in expansion mode since June 2020. In November, the index was recorded at 64.

The increase is on the back of a rise in exports and production in the country. Since the index value is above 50, it shows a significant expansion in Brazil's manufacturing sector. However, input prices also rose due to currency devaluation and constraints in the supply chain, which strained profitability.

The IHS Market survey also found that the employment numbers have improved significantly. In October'20; the index for employment rose to 58.2 from 56.5 in September'20, implying opening up of new jobs. In November'20, the index stood at 56.8. This has also boosted expectations of an increase in consumption.

Focusing on exports, Brazil's performance has remained less volatile between January and September 2020 in comparison to countries like China, the US and India. The impact of COVID-19 has been specifically seen on some sectors including manufactured goods. There has been a decrease in the number of countries where Brazil exports its goods. However, the hit on exports has been softened by commodities, thus showing their resilience.

BRAZIL'S EXPORT PERFORMANCE HAS REMAINED LESS VOLATILE BETWEEN JAN- SEP 2020 COMPARED TO CHINA, THE US & INDIA

The impact on imports of Brazil has also been small with a reduction by 5.21% YoY in the first half of 2020 that reflects an approximately equal split among the top three sources of imports for Brazil: the US, China and the EU.

A major factor that has helped the economy pick up momentum is the strong fiscal stimulus. The government has introduced fiscal packages worth 12% of the country's GDP to pull the economy out of the COVID slowdown, on similar lines as Latin American peers like Chile, Peru and Argentina. The stimulus focused on support to households in the form of cash transfers; support to businesses through expansion of the public banks' credit lines, boosting working capital and credit support to MSMEs. HE Mr André Aranha Corrêa do Lago, Ambassador of Brazil to India, affirms, "Estimates for GDP, as expected, are still of a 5% contraction in 2020,

approximately. The impact – less severe than that forecast for many G20 economies – would have been even greater, were it not for the countercyclical measures adopted by the Brazilian government, including Emergency Aid cash transfers; federal transfers to local authorities for improvements in health services; the Emergency Credit Access Program and the National Support Program for Micro and Small Enterprises. These measures should mitigate the severity of the recession and preserve financial integrity of businesses and families, setting a basis for recovery."

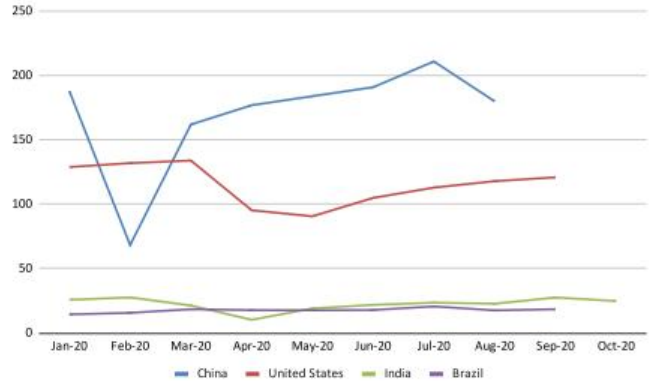
The large spending has helped the Brazilian government prevent its economy from a more severe downturn. Income support by the government, especially to poor families with inclusion of 1.2 million additional families under the Bolsa Familia programme, has provided almost US$ 110 per month to 30% of the population. Jahangir Aziz, Chief Emerging Markets Economist at JP Morgan, opines that public spending has contributed significantly in offsetting the fall in private demand in Brazil. Given that COVID infection rate in the second quarter was similar for both Brazil and India, it is worth noting that the contraction in GDP growth in the former was half of that for the latter.

Furthermore, Aziz said that in the absence of appropriate income support to households and firms, the Indian economy is expected to go into a financial crisis and affect medium term growth. Thus, India can learn from Brazil by providing support to households and firms. Malhar Shyam Nabar, Division Chief, Research department at IMF, has opined that the Indian government requires to tilt its fiscal policy more toward direct spending.

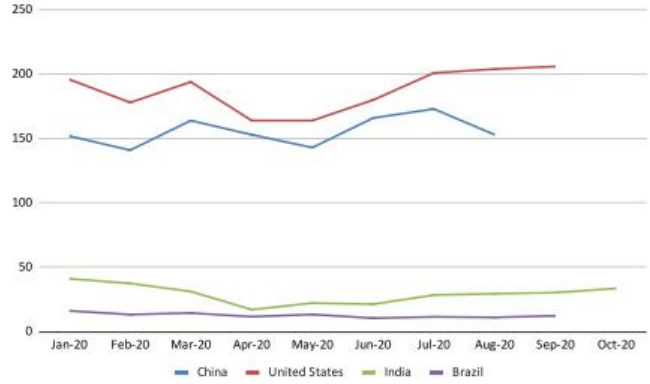
However, increasing the deficit due to large fiscal stimulus is putting the fiscal credibility of the economy at risk with debt-to-GDP ratio of Brazil at 90.5% in July 2020. As a result of the large spending, there is a fear of increasing inflation, which would push the elevating charges. The impact of this fear has already affected the market with a larger fall in Brazil's Ibovespa Index by 15% in year 2020 up to October in comparison to Mexico (*down 12.5%*) and India (*down 1%*).

In a crisis where the length of recovery curve is uncertain, however, the major risk is how to bring the economy back to spending prudence, once the fiscal burden becomes too difficult to bear. On the other hand, an early recovery through a relatively unscathed manufacturing sector can also be advantageous to economic and trade growth in the post-pandemic period. This is where the success of the response of Brazil and other Latin American countries will be tested in the coming months. ■

BRAZIL'S EXPORT TREND OVER 2020

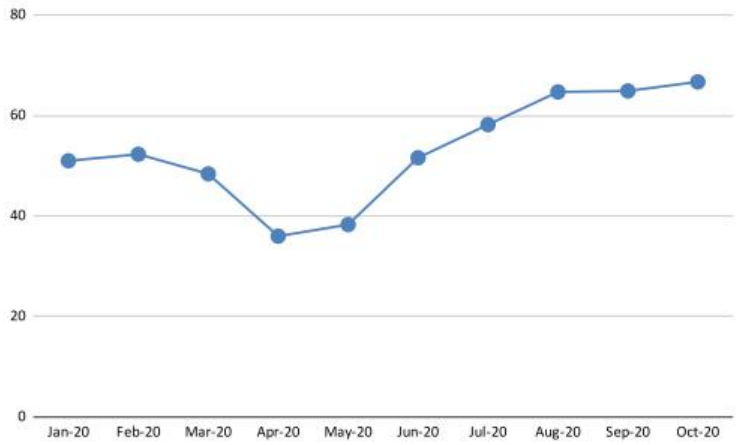


BRAZIL'S IMPORT TREND OVER 2020



Source: Observatory of Economic Complexity (OEC), figures in US$ billion for the period January-October 2020

PMI INDEX FOR BRAZIL



Source: Statista

Moratorium on duties for electronic transmissions at WTO is untenable

Rashmi Banga, Senior Economic Officer, UNCTAD, argues that developing countries should have the right to impose tariffs on electronic transmissions, especially with their ambiguous nature and the overwhelming dominance of a few countries in their exports.

IBT: ***What are the main concerns that developing nations like India have with respect to the moratorium on customs duties on electronic transmissions?***

Rashmi Banga: The first issue is that there is no clarity on what electronic transmissions include in the WTO. Developed countries are changing the definition of electronic transmissions quite regularly. Every study comes up with a different definition and scope.

Initially there was a note by WTO in 2015, which said that electronic transmissions are digital transmissions of those products that have digitalised. So now they are downloadable instead of being imported physically. That included movies, music, video games, print media and software.

Then there was a study last year by ECIPE, which also included some business services, which are electronically transmitted. And then around December 2019, there was a study by OECD that included all services. It said that electronic transmissions are digital deliveries, which cover all services that can be transmitted electronically or via Mode 1. This will include architectural services, health services, etc.

But we do not know what electronic transmissions are and what is the scope of the moratorium. Then how can we agree on extending the moratorium permanently, as developed countries are now demanding?

The second problem is that even if we stick to the original categories, that is those products, which have digitalised, four of these are luxury items with the exception of software. Every government should have the power to regulate imports of luxury items and charge customs duties.

According to our study, India can raise half a million dollars online from imposing custom duties on electronic transmissions, which is a growing source. As imports of these items go up in future, tariff revenue will also increase.

The third argument is that, in principle, why should exporters of physical goods pay customs duties, while the same can be exported online without paying the duty? This goes against the WTO principle of tech neutrality that when you are exporting something, irrespective of the technology, rules of import and export remains the same. Whether you are importing, downloading or streaming, the movie is the same.

The fourth reason, which is especially applicable for India, is that we have a budding homegrown industry or an infant digital industry. We have our own online streaming channels now and we want to protect them. They cannot compete with top players like Netflix or Amazon Prime Video. Domestic producers need a protective set up, so that they are able to compete. So, imposing customs duties on the likes of Netflix and Amazon and even video games are important. Furthermore, exporters in these categories are concentrated largely in 3-4 countries like US, China, etc. For these large players, paying customs duties is not a big issue.

IBT: What is your view on the argument that there can be more to lose for Indian industry as a whole if the moratorium is discontinued?

Rashmi Banga: The basic premise to be questioned is whether a developing country should have the right to apply customs duty or not. India can decide not to impose customs duty on a particular category of electronic transmissions, if it thinks it will benefit its industry.

For example, in the case of software, there can be many different kinds of software. If you feel that a particular software import will be needed for the industry and is not being developed domestically, you can reduce the customs duty to zero. Nobody will object to that. So, ending the moratorium will not harm your industry because you can decide the custom duties. So where do the adverse implications for industry come into the picture?

Moreover, bound duties are already at 0.2% for these products in developed markets, especially for movies and some kinds of software. I don't think there are any markets where India's exports will get hurt. And for imports, India can unilaterally impose custom duties at zero for any product it wants.

IBT: Supporters of ending the moratorium also argue that customs duties are hard to calculate, and therefore difficult to implement?

Rashmi Banga: When this moratorium was agreed in 1998, which is almost two decades back, there was no technology for calculating imports of electronic transmissions. But now the technology is available. Whenever you are importing anything electronically, you always use your debit or credit card and payment is made through the national gateway. Governments can track imports of these items. Once you can track imports of these items, customs duties should be the same as you apply on physical goods associated with these electronic transmissions. When you are importing a CD or a book, you already have negotiated tariffs on these items. The tariff can be calculated on that basis.

IBT: A proposed alternative is that tariffs can be replaced with internal taxation?

Rashmi Banga: Two kinds of taxes are being talked about here. First, in studies like ECIPE, they say that if you do not levy customs duties, your economic activities will increase, and you can levy internal taxes and collect the same tariff revenue, which is lost through internal taxes.

But in countries like India, there is a large informal sector out of the tax net. There is no certainty that you will be able to collect that amount of tax, which you are losing by not imposing custom duties. There is a recent study by Boston University, which has estimated that the possibility of recovering lost tariff revenues through an increase in internal taxes prevails only in developed countries. They have empirically estimated that a 1% loss in effective tariff revenue would lead to almost the same loss in effective tax revenue forever.

The second kind of taxes are discriminatory taxes. But, if you impose this tax in place of custom duties, then you have to justify why you are taxing your foreign service provider and not your domestic service provider. It will also depend on whether you have taken national treatment commitments in Mode 3 in GATS. If so, you should impose the same tax on both to be WTO compliant. But you don't want to tax your domestic players to the same extent as foreign suppliers like Netflix, because anyways, domestic players are unable to compete.

And if you start putting discriminatory taxes, i.e. you tax foreign suppliers and not your domestic suppliers, it will become difficult to justify. Even different countries within EU, e.g., France had great difficulty in imposing discriminatory taxes. But customs duties are a very flexible tool with the government. Also. even if you can impose discriminatory taxes, why should you lose such an important policy tool?

IBT: The scenario of the e-commerce industry is not at all comparable vis-à-vis 1998 when the moratorium was first imposed, and 2020. Why has it continued?

Rashmi Banga: They have kept extending it for two years at a time in order to show some outcome in every Ministerial. But the extension did not seem to be a problem prior to the Digital Revolution i.e., before 2008-09. But, after that, countries have really started understanding implications of this moratorium. If developed countries succeed in categorising services under electronic transmissions, then a permanent moratorium would imply that you cannot regulate the imports of these services. And that is what they are really looking for – all digital technologies need two things – data and software – and both are electronically transmitted. They do not want any regulations on these two. In the present COVID-19 pandemic, custom duties on electronic transmissions could have helped check conspicuous consumption and raise revenues for developing countries.

If you look at digital technologies like 3D printing, they are expected to wipe out over 50% of physical international trade in future. If the moratorium continues, then with 3D printers, foreign firms will not even need government permission to enter and they will be able to capture the domestic markets of our countries by remotely 3D printing our manufactured products. ■

Rashmi Banga is a Senior Economic Affairs Officer & Officer-in-Charge of the Unit on Economic Cooperation and Integration among Developing Countries (ECIDC), Division of Globalisation and Development Strategies (GDS), UNCTAD. Views expressed are her own.

Iceberg ahead for people & societies!

Nandu Nandkishore, Professor of Practice, Indian School of Business, cautions that with the rise of AI, automation, etc, individuals and societies need to prepare for a new world.

Technology-driven disruption has been a reality through the 20th century, but the pace of change is accelerating as we move further into this century. The internet, social media, mobile phones and Google are technologies we take for granted today. And none of these existed around 20+ years ago!

Every time there is dramatic change in society, it affects all aspects of our lives. The last time this happened was during the Industrial Revolution, when a lot of manual workers lost jobs & people migrated to cities. There was great social disruption over a generation, before people were (*re*)skilled enough to work in the new economy.

Something similar is happening today. The career span of an individual is far more demanding now compared to when I completed my MBA and stepped into the corporate world. The future of education is one of life-long learning as technologies and concepts are evolving so fast.

For instance, the concept of digital marketing did not exist 20 years ago, but today it is huge. In my generation, you did your graduation and your MBA; and with minor tweaks, it sufficed for a 30-35 year career. Today, the need of the hour is adult learning and life-long learning, which is also happening at the learner's convenience of time and space.

Already, technology exists to automate factories through robots and processes through software bots. So that is definitely going to impact a lot of jobs. For example, one of the key jobs in the legal profession is that of a paralegal who has to research to find out precedents for cases. But a software bot can do that job more efficiently, accurately and cheaply as compared to humans. So, the job of a paralegal is slowly getting displaced by software.

Likewise, almost anything that we can describe as a set of rules – whether it's an HR, finance or administrative process – if I can describe it as a set of 25 rules, or as a heuristic, it enables you to send it down a wire to Bangalore or Manila and get the work offshored.

But offshoring is only the first step; the next logical step is to remove the need for offshoring completely and replace it with a software that does the same job. The likes of Google and Microsoft have unveiled virtual assistants, that too with incredible kinds of interaction capabilities for a variety of services, thereby minimising the need for a human interface.

From here, it's only a small step forward and Elon Musk is already talking about finding some way to implant a chip and interface with the brain to create direct access to Artificial Intelligence. So, with technology moving in that direction, you are looking at the possibility of a society where people with access to money & technology can literally become, in some ways, superior humans!

So, you could argue that like the industrial revolution, we are headed for a phase of disruption and the jobs of yesterday will disappear. Long before COVID-19 happened, it was predicted that automation would have a huge impact on the workforce of tomorrow. In November 2019, a report by Bank of America Merrill Lynch predicted that 800 million jobs globally would be lost to automation by 2035, a figure confirmed by the McKinsey Global Institute. Already, we see that many new jobs that exist today like digital marketers, cryptocurrency and fintech industries could not even be envisioned 20 years ago.

These observations raise critical questions for the world on jobs and education in the future. Societies and countries need to grapple with these issues, especially because we don't have a road map or a good idea of what is about to unfold… we can only prepare by building capabilities. A lot of our societies, however, across countries without being specific, tend to look backwards and are preparing for a tomorrow that looks much like yesterday. In a very shocking way, that might turn out to be a self-fulfilling prophecy for those societies. ■

[Note from Author: I'm not an expert in education. The enclosed are my views and are not meant to be complete/ prescriptive. To read the complete article, visit https://bit.ly/37Liz5f]

ONLINE BSMS IN ASSOCIATION WITH INDIAN MISSIONS ABROAD

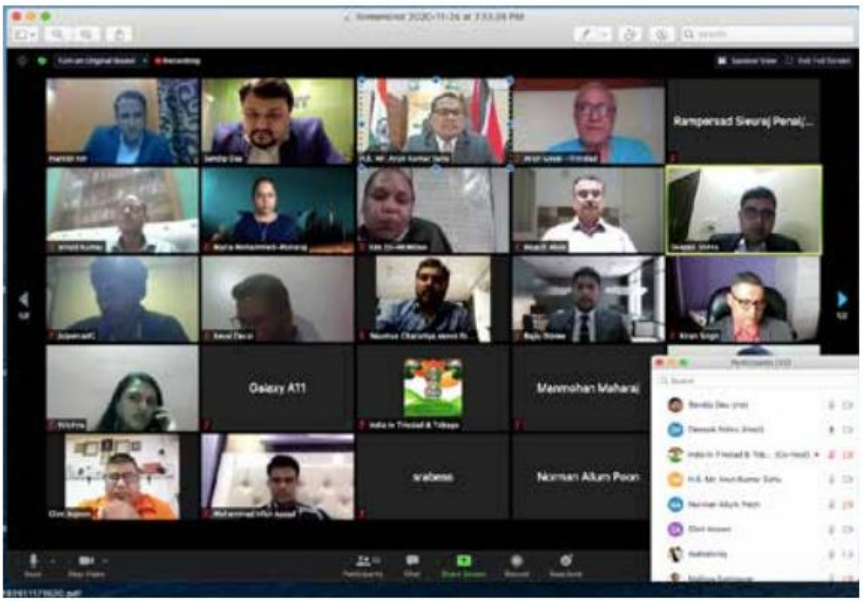
Despite the immense business and communication challenge posed by the COVID-19 pandemic, TPCI has taken a number of focussed initiatives to ensure uninterrupted access for Indian exporters to global business opportunities. With the support of the Ministry of Commerce & Industry, the Council organised a series of virtual meetings with Indian Missions abroad to promote trade in food & beverages and ceramics.

13.07.20
India-Lebanon VBSM on F&B Products
Special guest: HE Ambassador of India to Lebanon, Dr. Suhel Ajaz Khan

TPCI
India – Canada
Virtual Buyers Sellers Meeting on Food & Beverage
15th July 2020, 21.30 Hrs IST/12.00 Hrs EDT / 09.00 Hrs PDT
HO

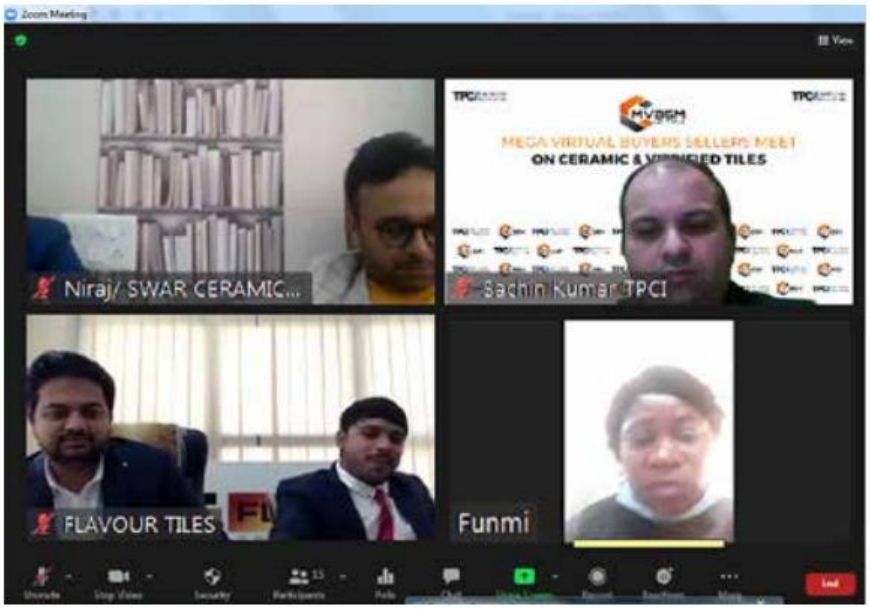
15.07.20
India-Canada Web BSM on Agro & Food Products
Special guest: HE the High Commissioner of India to Canada, Ajay Bisaria

24.09.20
India-Nigeria/ Benin VBSM on F&B Products
Special guest: HE High Commissioner of India to Nigeria, Abhay Thakur



24.11.20
India–Trinidad & Tobago, Grenada & Dominica VBSM on F&B products
Special guest: HE High Commissioner of India to T&T, Arun Kumar Sahu

14.12.20
India-Mexico VBSM on Ceramics & Vitrified Tiles
Special guest: HE the Ambassador of India to Mexico, Manpreet Vohra



17.12.20
India-Nigeria VBSM on Ceramics & Vitrified Tiles
Special guest: Ms. Funmi Ayodabo International Relations Officer, Lagos Chamber of Commerce & Industry

FOOD & BEVERAGES

MVBSM

Over 500 Indian exporters and around 900 buyers from countries across Asia, Europe, North America, Australia & Africa participated in virtual BSMs organised by TPCI for F&B sector.

April 29, 2020
India-Tanzania BSM on Food & Beverages

Focus country: Tanzania
Indian exporters: 15
Tanzanian buyers: 25
Focus products: Rice, Pulses, Spice, Sugar, Biscuits & cookies, Tea & coffee premixes, Ethnic food products & sweets

---

06 May – 18 Jun, 2020
India Gulf BSM on Food & Beverages

Focus countries: Bahrain, Egypt, Iraq, Israel, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, United Arab Emirates
Indian exporters: 93
Foreign buyers: 150
Focus products: Rice, Pulses, Spices, Sugar, Biscuits & cookies, Tea & coffee premixes, Ethnic snacks & sweets, Tea & coffee, dairy products, Peanut butter, Sauces & condiments, Fruits & vegetables, Ready to cook, Frozen meat, Edible oil

14 May – 26 June 2020
India-ASEAN, NEA & OCEANIA Virtual BSM on Food & Beverages

Focus countries: Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam, China, Hong Kong, Japan, South Korea, Australia, New Zealand
Indian exporters: 87
Foreign buyers: 200
Focus products: Dairy Products, Spices, Sesame Seeds, Rice, Flour, Tea, Ethnic Products, Ready to Eat, Ready to Cook, Frozen Meat, Biscuits & Cookies, Organic Food Products

---

06 Jun – 25 Jul, 2020
India-USA & Canada Virtual BSM

Focus countries: Canada & USA
Indian exporters: 65
Foreign buyers: 90
Focus products: Rice, Pulses, Spices, Sugar, Biscuits & Cookies, Tea & Coffee Premixes, Ethnic Snacks & Sweets, Tea & Coffee, Peanut Butter, Non-Alcoholic Beverages, Butter Fat, Frozen Fruits & Vegetables, Organic Food Products

15 Sep – 31 Oct, 2020
Mega Global Virtual BSM on Food & Beverages

Focus countries: Benin, Ethiopia, Ghana, Kenya, Mozambique, Nigeria, Rwanda, S. Africa, Tanzania, Uganda, Democratic Republic of Congo, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam, Austria, Belgium, Czech Republic, Denmark, France, Germany, Greece, Italy, Latvia, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, UK, Canada, Mexico, US, China, Hong Kong, Japan, S. Korea, Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Sri Lanka, Bahrain, Egypt, Iraq, Israel, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, UAE

Indian exporters: 200
Foreign buyers: 400
Focus products: Rice, Pulses, Spices, Sugar, Biscuits & Cookies, Tea & Coffee Premixes, Ethnic Snacks & Sweets, Tea & Coffee, Dairy Products, Peanut Butter, Sauces & Condiments, Fruits & Vegetables (*Fresh & Frozen*), Ready to Cook, Frozen Meat, Edible Oil, Organic Food Products, Jam & Jellies

---

May – 15 Jul, 2020
India-Europe Virtual BSM on Food & Beverages

Focus countries: Austria, Belgium, Denmark, France, Germany, Ireland, Italy, Latvia, Netherlands, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom
Indian exporters: 120
Foreign buyers: 115
Focus products: Rice, Pulses, Spices, Sugar, Biscuits & Cookies, Tea & Coffee Premixes, Ethnic Snacks & Sweets, Tea & Coffee, Peanut Butter, Non- Alcoholic Beverages, Edible Oil, Organic Food Products, Sauces & Condiments, Fruits & Vegetables, Ready to Cook

FOOD TECHNOLOGY

MVBSM

TPCI conducted over 30 Buyer-Seller Meetings between September 21 & October 29, 2020 with a focus on food processing technologies and packaging solutions.

21-09-2020
Packaging Machinery and Equipment Suppliers with F&B processors from India
Focus country: India
Focus sectors: Packaging Solutions
Exporters: 7 **Buyers:** 11
B2B meetings: 37

22-09-2020
Dairy Technology & Machinery Suppliers with processors from SAARC
Focus countries: Bangladesh, Nepal, Sri Lanka
Focus sectors: Dairy Processing Technology
Exporters: 8 **Buyers:** 14
B2B meetings: 58

23-09-2020
Beverage Plant and Machinery Suppliers with Beverage Processors from India
Focus country: India
Focus sectors: F&B Processing Technology
Exporters: 7 **Buyers:** 11
B2B meetings: 52

23-09-2020
Edible Oil Plant & Machinery Suppliers with Edible Oil Processors from India
Focus country: India
Focus sectors: Edible Oil Processing Technology
Exporters: 9 **Buyers:** 10
B2B meetings: 63

24-09-2020
Food Ingredient Suppliers with F&B Processors from SAARC
Focus countries: Nepal, Bangladesh, Sri Lanka
Focus sectors: Food Ingredients
Exporters: 6 **Buyers:** 12
B2B meetings: 46

25-09-2020
Dairy Technology & Machinery Suppliers with Processors from India
Focus country: India
Focus sectors: Dairy Processing Technology
Exporters: 6 **Buyers:** 10
B2B meetings: 29

28-09-2020
Edible Oil Plant and Machinery Suppliers with Edible Oil Processors from East Africa
Focus countries: Kenya, Ethiopia, Zambia, Malawi, Uganda
Focus sectors: Edible Oil Processing Technology
Exporters: 8 **Buyers:** 11
B2B meetings: 65

29-09-2020
Edible Oil Plant and Machinery Suppliers with Edible Oil Processors from Middle East
Focus countries: Egypt, UAE, Iran, Oman
Focus sectors: Edible Oil Processing Technology
Exporters: 9 **Buyers:** 12
B2B meetings: 62

30-09-2020
Snack Plant and Machinery Suppliers with Snack Processors from India
Focus countries: India
Focus sectors: Snacks Processing Technology
Exporters: 8 **Buyers:** 13
B2B meetings: 59

30-09-2020
Edible Oil Plant and Machinery Suppliers with Edible Oil Processors from SAARC
Focus countries: Nepal, Bangladesh, Bhutan
Focus sectors: Edible Oil Processing Technology
Exporters: 9 **Buyers:** 18
B2B meetings: 87

01-10-2020
Packaging Solutions Suppliers with F&B processors from West Africa
Focus countries: Nigeria, South Africa, Ghana
Focus sectors: Packaging Solutions
Exporters: 7 **Buyers:** 14
B2B meetings: 62

05-10-2020
Packaging Solutions Suppliers with F&B processors from South East Asia & Oceania
Focus countries: Australia, Vietnam
Focus sectors: Packaging Solutions
Exporters: 8 **Buyers:** 15
B2B meetings: 48

05-10-2020
Dairy Technology & Machinery Suppliers with Processors from MENA
Focus countries: Egypt, Ghana, Kenya, Kuwait, Nigeria
Focus sectors: Dairy Processing Technology
Exporters: 7 **Buyers:** 13
B2B meetings: 51

05-10-2020
Exclusive Session for Dairy Technology & Machinery Suppliers from Oman
Focus countries: Oman
Focus sectors: Dairy Processing Technology
Exporters: 8 **Buyers:** 1
B2B meetings: 8

06-10-2020
Snack Plant & Machinery and Suppliers with Processors from SAARC
Focus countries: Nepal, Bangladesh, Sri Lanka
Focus sectors: Snacks Processing Technology
Exporters: 6 **Buyers:** 15
B2B meetings: 48

07-10-2020
Edible Oil Plant and Machinery Suppliers with Edible Oil Processors from South East Asia
Focus countries: Malaysia, Indonesia, Vietnam
Focus sectors: Edible Oil Processing Technology
Exporters: 7 **Buyers:** 10
B2B meetings: 47

07-10-2020
Snacks Plant & Machinery and Food Ingredient Suppliers with F&B Processors from India
Focus country: India
Focus sectors: Snacks Processing Technology & Food Ingredients
Exporters: 8 **Buyers:** 8
B2B meetings: 27

08-10-2020
Edible Oil Plant and Machinery Suppliers with Edible Oil Processors from West Africa
Focus countries: Nigeria, Ghana, Burundi
Focus sectors: Edible Oil Processing Technology
Exporters: 9 **Buyers:** 14
B2B meetings: 83

09-10-2020
F&B Ingredient Suppliers with F&B Processors from West Africa
Focus countries: Ghana. South Africa, Nigeria
Focus sectors: Food Ingredients
Exporters: 7 **Buyers:** 13
B2B meetings: 38

12-10-2020
F&B Plant and Machinery Suppliers with Beverage Processors from SAARC
Focus countries: Nepal, Bangladesh, Sri Lanka, Bhutan
Focus sectors: F&B Processing Technology
Exporters: 9 **Buyers:** 17
B2B meetings: 61

19-10-2020
Dairy Technology & Machinery Suppliers with Processors from SAARC
Focus countries: Sri Lanka, Bangladesh, Nepal
Focus sectors: Dairy Processing Technology
Exporters: 8 **Buyers:** 14
B2B meetings: 46

12-10-2020
F&B Plant and Machinery Suppliers with Beverage Processors from India
Focus countries: India
Focus sectors: F&B Processing Technology
Exporters: 8 **Buyers:** 5
B2B meetings: 34

19-10-2020
Edible Oil Plant and Machinery Suppliers with Edible Oil Processors from Africa
Focus countries: Ghana, Kenya, Nigeria, Sudan, Tunisia
Focus sectors: Edible Oil Processing Technology
Exporters: 8 **Buyers:** 16
B2B meetings: 58

20-10-2020
Packaging Solutions Suppliers with F&B processors from across the globe
Focus countries: Bangladesh, Egypt, Ghana, Iraq, South Africa, Sri Lanka, Tanzania
Focus sectors: Packaging Solutions
Exporters: 7 **Buyers:** 14
B2B meetings: 49

21-10-2020
F&B Plant and Machinery and Packaging Solutions Suppliers with F&B processors from across the globe
Focus countries: Bhutan, Egypt, Ghana, Nepal, Sri Lanka
Focus sectors: F&B Processing Technology & Packaging Solutions
Exporters: 8 **Buyers:** 15
B2B meetings: 53

22-10-2020
F&B Plant and Machinery and Packaging Solutions Suppliers with F&B processors from across the globe
Focus countries: Australia, Bangladesh, Ghana, Kenya, Russia, South Africa, Sri Lanka, Turkey
Focus sectors: F&B Processing Technology & Packaging Solutions
Exporters: 8 **Buyers:** 15
B2B meetings: 43

26-10-2020
Snacks Plant and Machinery Suppliers with F&B processors from across the globe
Focus countries: Bangladesh, Nigeria, Sri Lanka, Ghana, Uganda, Oman, Nepal
Focus sectors: Snacks Processing Technology
Exporters: 8 **Buyers:** 17
B2B meetings: 53

27-10-2020
F&B Plant and Machinery and Packaging Solutions Suppliers with F&B processors from across the Globe
Focus countries: Iran, Bangladesh, Nepal, Ghana
Focus sectors: F&B Processing Technology & Packaging Solutions
Exporters: 7 **Buyers:** 15
B2B meetings: 27

27-10-2020
F&B Plant Suppliers with F&B processors from Americas
Focus countries: US, Canada, Mexico
Focus sectors: F&B Processing Technology
Exporters: 6 **Buyers:** 7
B2B meetings: 26

29-10-2020
F&B Plant and Machinery and Packaging Solutions Suppliers with F&B processors from SAARC
Focus countries: Bangladesh
Focus sectors: F&B Processing Technology & Packaging Solutions
Exporters: 7 **Buyers:** 7
B2B meetings: 34

29-10-2020
Edible Oil Plant and Machinery Suppliers with Edible Oil Processors across the globe
Focus countries: Russia, Ghana, Iran, Turkey
Focus sectors: Edible Oil Processing Technology
Exporters: 4 **Buyers:** 8
B2B meetings: 36

CERAMICS & TILES

TPCI launched a Mega Virtual Buyer Seller Meet (*MVBSM*) for Ceramics & Vitrified Tiles on December 2, 2020. This event hosted an elite congregation of ceramic & vitrified tiles suppliers from India, offering a variety of products like wall tiles, floor tiles, roof tiles, partition tiles, heavy duty parking tiles, sanitary wares and slabs.

2-Dec-20
India-North East Asia Buyers Sellers Meet on Ceramics & Tiles
Focus countries: Japan, South Korea, Taiwan
Exporters: 6
Buyers: 7
B2B meetings: 37

3-Dec-20
India-South East Asia Buyers Sellers Meet on Ceramics & Tiles
Focus countries: Malaysia, Vietnam, Indonesia and Thailand
Exporters: 7
Buyers: 6
B2B meetings: 41

4-Dec-20
India-Oceania Buyers Sellers Meet on Ceramics & Tiles
Focus countries: Australia and New Zealand
Exporters: 5
Buyers: 6
B2B meetings: 28

6-Dec-20
India-GCC Buyers Sellers Meet on Ceramics & Tiles
Focus countries: Oman, Qatar, Kuwait, Saudi Arabia
Exporters: 4
Buyers: 7
B2B meetings: 20

7-Dec-20
India-LATAM Buyers Sellers Meet on Ceramics & Tiles
Focus countries: Brazil, Chile, Peru, Colombia and Guatemala
Exporters: 5
Buyers: 5
B2B meetings: 23

8-Dec-20
India-Europe Buyers Sellers Meet on Ceramics & Tiles
Focus countries: Belgium, UK, Greece, Poland, Italy and Portugal
Exporters: 7
Buyers: 7
B2B meetings: 48

09-12-2020
India-US Buyers Sellers Meet on Ceramics & Tiles
Focus country: US
Exporters: 6
Buyers: 6
B2B meetings: 35

10-Dec-20
India-Africa Buyers Sellers Meet on Ceramics & Tiles
Focus country: Ghana, Kenya, Nigeria and South Africa
Exporters: 6
Buyers: 11
B2B meetings: 36

14-Dec-20
India-LATAM Buyers Sellers Meet on Ceramics & Tiles
Focus countries: Brazil, Chile, Peru, Mexico, Argentina, Colombia and Guatemala
Exporters: 8
Buyers: 8
B2B meetings: 52

15-Dec-20
India-Europe Buyers Sellers Meet on Ceramics & Tiles
Focus countries: Belgium, UK, Greece, Poland, Italy and Portugal
Exporters: 7
Buyers: 6
B2B meetings: 40

16-Dec-20
India-US Buyers Sellers Meet on Ceramics & Tiles
Focus country: US
Exporters: 7
Buyers: 5
B2B meetings: 28

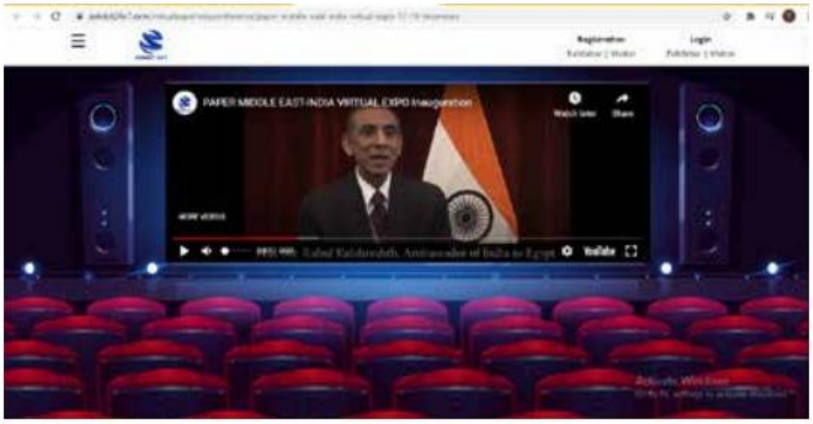
17-Dec-20
India-US Buyers Sellers Meet on Ceramics & Tiles
Focus country: US
Exporters: 6
Buyers: 5
B2B meetings: 30

18-Dec-20
India-Oceania Buyers Sellers Meet on Ceramics & Tiles
Focus countries: Australia and New Zealand
Exporters: 5
Buyers: 4
B2B meetings: 17

18-Dec-20
India-LATAM Buyers Sellers Meet on Ceramics & Tiles
Focus countries: Brazil, Chile, Peru, Colombia
Exporters: 5
Buyers: 5
B2B meetings: 25

PAPER MIDDLE EAST INDIA VIRTUAL EXPO

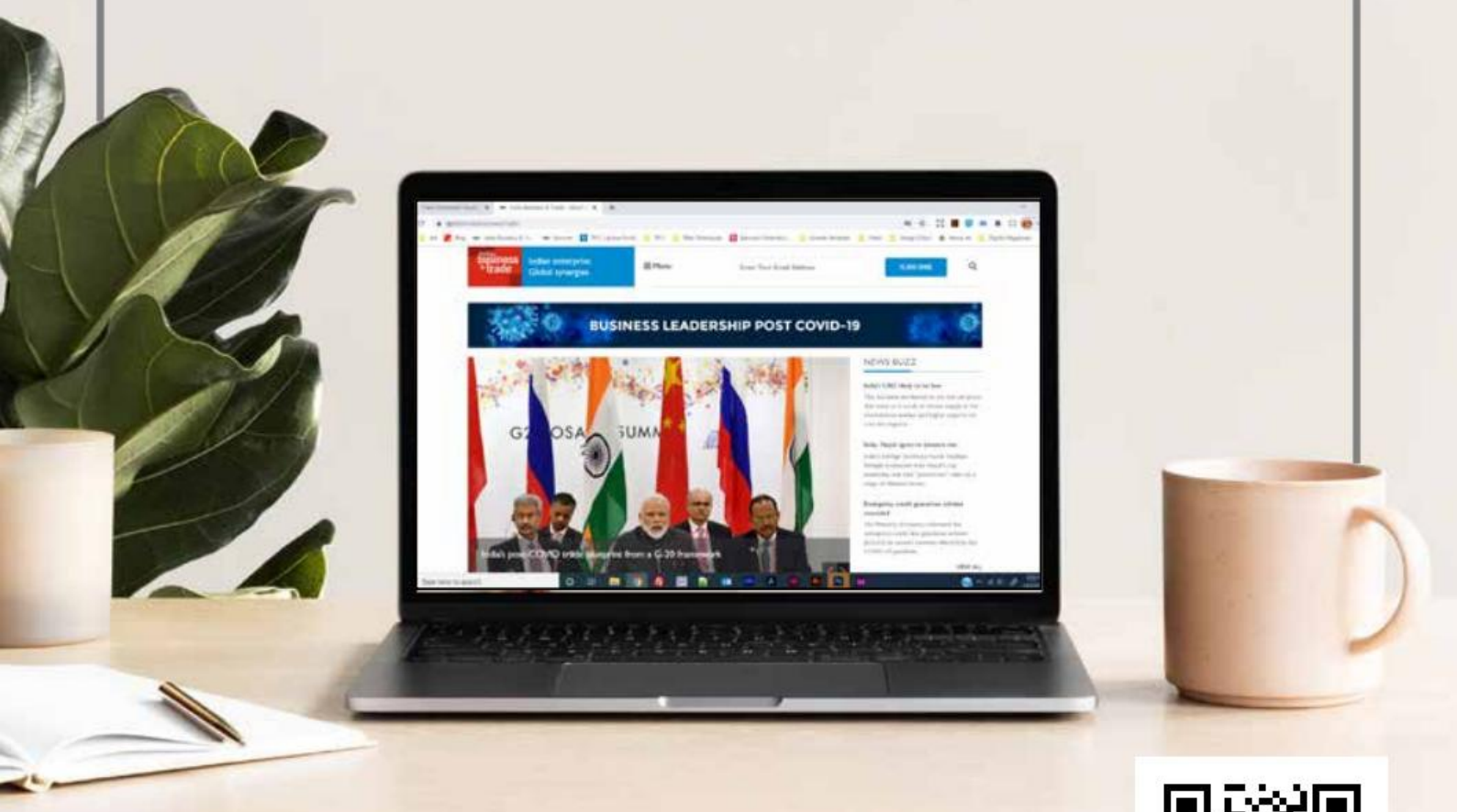
TPCI in association with Department of Commerce, Government of India and Embassy of India to Egypt organised India's virtual participation at Paper Middle East Hybrid Expo 2020, held during December 17-19, 2020. The event involved 50 Indian exporters from Paper, Paper pulp, paper products, Paper Technology, Paper Chemical and other ingredient sectors.



India business & trade
Indian enterprise. Global synergies.

PERSPECTIVES. INSIGHTS. THOUGHT LEADERSHIP

The authoritative knowledge platform for the Indian enterprise in a dynamic global market.



tpci.in/IndiaBusinessTrade